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THE BRITISH TACHINIDAE (DIPTERA): SECOND SUPPLEMENT

By Colbran J. Wainwright, F.R.E.S.

(Read 5th June, 1940.)

Manuscript received 16th April, 1940.

With Eleven Text-figures.

Since the publication of my paper on the British Tachinidae in 1928 (*Trans. ent. Soc. Lond.* **76** : 139–254, 2 pls.) and the first supplement in 1932 (*Trans. ent. Soc. Lond.* **80** : 405–424) much collecting has been done. In particular Mr. J. E. Collin and I have paid several visits to the north of Scotland, the dipterous fauna of which was very little known, and have also worked a number of localities on chalk downlands, which as it happened had also been rather neglected previously. The latter have proved unexpectedly rich in species of this family, some even seeming to be more or less peculiar to that type of country. As a consequence there is a number of additions to the British list to be recorded, and much fresh information about the distribution of earlier known species to be given so that this second supplement has become necessary. In the following notes the original paper published in 1928 is referred to as B.T.

Echinomyia Dumér.

E. ferox Panz. seems widely distributed in the south of England. Dr. F. H. Haines tells me that he always regarded it as common in Dorset; Dr. C. D. Day reports similarly; and in 1938 I myself found it common locally in Sussex. Mr. J. Collins found it last year, 1938, at Hell Coppice near Oxford; Mr. Claude Morley appears to have taken it at Brandon in W. Suffolk; and Mr. E. E. Green has found it at Camberley, Surrey. It is just possible that the species is extending its range, as Mr. H. W. Andrews, who knows his own district well, tells me that he had never seen it until 1931, when he found a single one at Bexley, Kent, but in 1934 he took several in Beesfield Valley, Farningham. Further, in the same year 1934 he found it at Bembridge, Isle of Wight, where it was very common.

If one is to yield blind devotion to the law of priority as set forth in the International Code of Zoological Nomenclature, it appears that the name *Echinomyia* must be sunk as a mere synonym of *Tachina*, and the name *Tachina*, which has for so long been used in an entirely different sense, will have to be transferred to this genus. It is to be hoped that some method of avoiding such a confusing and unfortunate change may be found before it is too late.

Peleteria R.-D.

I understand that the record of the Cambridge University Museum *nigricornis*, referred to in B.T. : 174, has been traced and that the specimens in question were taken by the Rev. L. Jenyns more than 70 years ago at the Devil's Ditch, near Newmarket.

Mr. Claude Morley has recently, in *Trans. Suffolk nat. Hist. Soc.* **1937**, recorded this species under the name *tessellata* from Brandon, W. Suffolk, and

the New Forest. Mr. Morley kindly allowed me to examine some of the specimens upon which the record was based, and they proved to be examples of *Echinomyia* (*Fabriciella*) *ferox* Panz. The Cambridge specimens still remain the only British *nigricornis* known to me.

Incidentally it is interesting to note that whilst Mr. Morley identified his *F. ferox* as *tessellata*, Jenyns had recorded his *nigricornis* (*tessellata*) in his diary as *T. ferox*.

Micropalpus Macq.

M. comtus Fall. is perhaps a downland species, as it has been found recently in two or three localities on the Sussex Downs : at Clapham Woods near Worthing, and at Jevington and Alfriston near to Eastbourne. It is, however, still a rarity in collections although Mr. Collin once took 5 specimens in a few minutes at one spot by Clapham Wood, but prolonged search on that occasion failed to produce others.

Ernestia R.-D.

Since writing the account of this genus, in B.T. : 175–178, I have become much better acquainted with some of the less known species, and in particular with *nemorum* Mg., *consobrina* Mg. and *vivida* Zett. Speaking generally it may be said that further knowledge has confirmed my earlier views, and the key as published is accurate as far as it goes, but it is now possible to supplement considerably the information there given.

Until 1938 only one ♀ specimen of *nemorum* Mg. had come my way, this having been taken by me in the Ham Street Woods, Kent, on 5.vi.1936. In that year, however, Mr. J. E. Collin and I, collecting at the beginning of August on the South Downs near Eastbourne, found it to be quite common on the flowers of white umbelliferae. It was especially on the slopes of Malling Hill, near Lewes, and behind Beachy Head that we found it freely, but it seems likely that it is a regular downland species and was to be got wherever there were flowers of the umbellifer (*Angelica* ?) to attract it.

It can be easily recognised in both sexes. Excepting for the usual tomentum, it is a black insect, with no rufous at sides of abdomen, and entirely dark scutellum. Its chaetotaxy is distinctive, especially the complete absence of any crossed apical scutellars; there are four well-developed setae on each side of the scutellum, the hindmost pair being long, strong and parallel. Also the acrostichals are little developed. Stein says that there is only one pair of prescutellars; actually while one pair is the most frequent there are often two pairs, and sometimes none, but I think never three. Before the suture there may be an ill-developed pair, but most frequently none where in most of this genus strong macrochaetae are to be found. The frons is wide, about two-thirds of eye-width as seen from above; the second joint of the antennae is as long as the third; there is usually a cubital appendage to fourth wing-vein.

The ♂ genital segments are simple compared with those of some of the genus; the side claspers with only a slight development of the remarkable basal scale-like plates found, for example, in *consobrina* Mg. and *vivida* Zett.; the central clasper quite lacking the striking basal projection also found in those two species; and the tip of same blunt and rounded, unlike that of *caesia* Fall., which, otherwise similar, is pointed. Incidentally, between the fourth visible tergite and the first genital segment, the fifth tergite is distinguishable as a very narrow band with a distinct hind marginal series of setae.

The ♀ genitalia are also distinctive, the apparent sixth and seventh sternites are at least twice as wide as they are long; that is to say, the longitudinal

measurement is very short; the seventh is smooth anteriorly with a central indentation, and posteriorly there is a central cluster of short setae.

In July 1936 Mr. H. Britten met with *consobrina* Mg. in considerable numbers on Chat Moss, Lancashire, and very kindly sent me a long series. Mr. Collin and I have taken *vivida* Zett. on Farley Down, Hants, on several occasions and last year found it on the Sussex Downs near Jevington, and with a pair that I took on the Chilterns at Aston Rowant in 1927, I now have a useful series of that species. This has given me an opportunity of studying these two closely allied species about which I felt much doubt in 1928 and which Stein would not accept as being distinct. Actually there is no doubt about the distinction, the ♂ genitalia alone decide that; but they are certainly very difficult to separate by external characters alone. The frons of *consobrina* is narrower than that of *vivida*, but not much, and not always to the same degree. Normally *consobrina* has 4 D.C. and *vivida* only 3, but Stein was right in regarding this as an unreliable character. The first two *consobrina* that I examined had 4 on one side and 3 on the other. There seems a slight difference in what I take to be the reduced fifth tergite, which seems more completely fused with the first genital segment in *vivida* than in *consobrina*. In the latter it seems to show the join more conspicuously and to be differentiated from the rest of the very shining black segment by being covered with whitish tomentum, of which there is little sign in *vivida*. The only good and certain characters, however, are those afforded by the genitalia.

In these two species and some others of the genus there are in the ♂♂ some remarkable developments at the base of the claspers. The side claspers have on the outside of each a large thin scale-like process somewhat rounded in outline and spreading outwards fan-like. These are similar but not quite alike in the two species. The development from the central clasper is equally remarkable and forms a considerable erection from the outer (dorsal) surface. In *consobrina* this chiefly consists of a thin plate on edge and placed longitudinally, acutely triangular in outline seen sideways and terminating in a sharp spear-like point. It is large enough almost to hide the clasper itself. Seen from above it shows a single and simple edge. In *vivida* the process is not triangular, is somewhat smaller, or at least does not project so far, and seen from above it is wide and grooved so as to present an apparent double edge. Even when the genitalia are not drawn out, this double edge can usually be seen. If, however, the genitalia cannot be seen sufficiently clearly these two species can perhaps be recognised by the fifth sternite, which is divided more than half-way in *consobrina*, and less than half in *vivida*.

In the ♀♀ the genital segments are again quite distinctive. In *consobrina* the apparent sixth sternite is longer than wide and much larger than the fifth, and is completely covered with depressed setae, at most a slight bare groove showing centrally. In *vivida* the sixth sternite is not much larger than the fifth, which is also somewhat enlarged. The front margin is bare and smooth and a wide triangular smooth space extends to the hind margin, leaving the two hind marginal corners and sides covered with the depressed setae. The seventh sternite in both species is small, bare and shining with a central depression.

These genital segments seem to afford distinctive characters for the ♀♀ of all the species in this genus.

Mr. Collin tells me that *consobrina* Mg. was common at Fowl Mere, near Thetford, Norfolk, in August 1938.

Mr. Collin also took two males of *conjugata* Zett. in Aldridge Hill Enclosure,

New Forest, on 26.v.1931, which I have seen; and with them I had an opportunity to re-examine the pair taken at Culford, W. Suffolk, by Col. C. G. Nurse in 1911 and recorded by me in B.T. as *Eurythia caesia* Fall. and which have in the meantime passed into Mr. Collin's possession. These latter have also proved to be examples of *conjugata* Zett., examination of the genitalia removing all doubts. The Folkestone specimens of *caesia*, 4 ♀♀, are thus left as the only British examples of that species known to me at present.

I am still anxious to get good series of *caesia* Fall., *connivens* Zett. and *conjugata* Zett., to make sure of them. *caesia* and *connivens*, like *nemorum* and *vivida*, may, I suspect, prove to be downland species, and *conjugata* and *consobrina* otherwise.

Panzeria vagans Mg., which was recorded and figured in the first supplement, appears to be widely distributed, and amongst other places has been taken in the north of Scotland at Grantown-on-Spey and Culbin Sands. It has proved to be fairly common in Wyre Forest, where, on one fine day, 30 May, 1937, when *Panzeria* spp. were abundant on the flowers of *Euphorbia*, the proportions were about one *vagans* to five *rudis*. That day all the specimens taken were ♂♂. The Scotch ones seem to be darker than English ones, owing to rather less development of the abdominal tomentum, but so far I have only ♀♀ from there.

I now find that there are differences between the female genitalia of *rudis* and *vagans*. In *vagans* the genital tergites are closely compressed, so that no yellow membrane shows between them; in *rudis* these tergites are much more spread out and the yellow membrane between them is widely exposed. In *vagans* the sixth and seventh sternites, which in both species are very short, have a wide groove-like central indentation, of which there is little to be seen in *rudis*. *vagans* has many long bristle-like hairs overlaying these same sternites and partly hiding them, and in *rudis* the hairs are few and short and the sternites conspicuous.

In B.T. : 176 in the key for the males the second line in couplet 5 should read :—

" Second joint of arista short and inconspicuous . . . Subgen. *Ernestia* R.-D. 6."

The words " Subgen. *Ernestia* R.-D." should be deleted from couplet 4.

Eversmannia R.-D.

E. ruficauda Zett. is one of the species that has turned up in the north of Scotland, where Mr. J. E. Collin and I have found it in various localities, from Loch Tummel in Perthshire to Glen Shin in Sutherlandshire. Although far from common, it is evidently widely distributed and well established there. Most of those taken were obtained by sweeping birches in moorland country.

Winthemia R.-D.

In B.T. : 180 in the key to the species of this genus the word " discal " should be inserted before " macrochaetae " in each case.

Carcelia rutilla Rond.

When writing B.T. I knew of only three British specimens of this species, although I have since learned from Dr. F. W. Edwards, F.R.S., that there were three others in the British Museum collection, two ♂♂ from Lyndhurst Road (*Col. Yerbury*, 1894) and one ♂ from Wolmer Forest (*W. R. O. Grant*, 1892), and I am told that Mr. C. N. Hawkins had also bred it. Recently Dr. E. A.

Cockayne very kindly sent me a series of 22 specimens of the species, 10 ♂♂ and 12 ♀♀, which he had bred this April (1939) from larvae of *Bupalus piniaria* L. collected at Oxshott. The species had already been recorded on the Continent as being a parasite of *piniaria*, and as that is one of our common geometers it might be expected that its parasite should also be fairly common. Dr. Cockayne tells me that he had about 500 larvae of the moth, and that these 22 flies were all that were bred, so that the percentage of parasitism was low, apparently 4·4%.

By a curious chance, shortly after receiving the above, on 4 August, 1939, I joined Mr. Collin at Witherslack, Westmorland, for a few days collecting, and on my arrival he showed me specimens of this species which he had taken at Holker Moss that day, and afterwards I had the pleasure of capturing a series there myself. It seemed very localised, but at one spot it was not uncommon and we each took as many as we wanted, though mostly ♂♂.

Examination of these long series seems to show that the specific characters are constant enough. There are nearly always long bristles on the abdominal segments which can be described as discal macrochaetae, though in a few cases these may fail on the second segment altogether, and be reduced to one or two only on the third. The leg bristles seem to offer the most reliable characters as in every case there were two on the outer (posterior) side of the fore tibiae, so that even when the abdominal discals are indistinguishable, *rutilla* can be distinguished from *excisa* Fall. (and the non-British *flavicans* Macq.), the only other species covered with yellowish tomentum, which have only one bristle in this position.

Exorista Mg.

E. affinis Mg. In B.T. this species was included in the key and further described, although at the time I had not seen a British example. The name occurred in old lists, however, and it seemed almost certain that it would be found here. Recently Mr. J. E. Collin, examining some old specimens in his collection, found an *Exorista* in bad condition which seemed different and he dissected it and sent me a drawing of the genitalia, which I compared with those of Continental *affinis* Mg. in my collection. I have little doubt that they belonged to the same species. The specimen was labelled " 1866 Folkestone, Piffard." Mr. Collin also tells me that he has since discovered another one labelled " Deal 18.6.21 " bred by Mr. A. E. Tonge from *Arctia caja* L.

E. fimbriata Mg. In B.T. : 184 it is said that the antennae of this species have the third joint less than twice the length of the second. This is true of the ♀ but scarcely so of the ♂, in which the third joint is rather more than twice the length of the second.

E. cincinna Rond. In B.T. : 185 it is said that the frons in the ♂ is about three-quarters of eye-width; it, however, is really nearly equal to the eye-width. This species has 4 sternopleurals.

E. glauca Mg. etc. (figs. 1–5). In B.T. will be found, amongst the species of *Exorista*, *glauca* Mg. listed as a fairly common insect. It was one that I thought I knew, variable certainly, but apparently an ordinary case of such variations as one might reasonably expect to find in the progeny of a single parent. Then the capture of a few odd ♀♀ in various localities, which though at first regarded merely as forms of *glauca* yet aroused suspicions, led me to decide in 1936 that I would collect all the ♂♂ that I could, and see if anything was to be learnt from a careful study of their genitalia. The first opportunity occurred in

August of that year, when in Glen Shin, Sutherlandshire, a spot was found where these insects were being attracted not uncommonly to some umbels in flower, and a series was obtained. On examination under the microscope that evening it was seen at once that there were amongst them two distinct forms of claspers. This was followed by some intensive study of the group, with the ultimate result that I am now able to record and describe five British forms in place of the single original *glauca*, these being :—*glirina* (Rond.) Pand. = *glauca* of B.T. and of most recent authors; *glauca* Mg. = *humiliceps* Pand. *nec glauca* of B.T.; *cotei* Grilat = *quadriseta* Villen.; *ingens* B. & B.; and *vicina* sp. n., all very closely allied insects and probably to be found mixed in series of so-called *glauca*.

My friend Dr. Villeneuve de Janti, in writing about some of these forms (1927), has expressed the opinion that they do not constitute full species, but belong to a kind of species complex centring on *glauca*, and he calls them "espèces naissantes." According to his views, they should be regarded as subspecies and referred to trinomially. Whether, however, they be regarded as full species or subspecies, and this will remain very much a matter of opinion, is not really material as the five forms can be recognised without difficulty by examination of the male genitalia; and having done this a number of less constant but definite external characters can be detected which are confirmatory, so that although closely related they are distinct enough. Further, it should be remembered that we know far too little about the biology and early stages of these insects, and slight external structural distinctions may be associated with profound biological differences, and, moreover, it is impossible in any case to judge of the degree of importance of most taxonomic characters.

In the meantime, therefore, I propose to treat these forms as distinct species, and if others consider that they are better regarded as subspecies they can still be so regarded.

As stated above, our five species are clearly separated at once on the form of the ♂ claspers, and my friend Mr. J. E. Collin having very kindly made some of his beautiful drawings to show these features (figs. 1–5), nothing more will be required to enable identification of the species in that sex when the genitalia are visible.

To assist when the genitalia cannot be seen, however—and in the case of all ♀♀ difficulty may be experienced—I give below the external characters of both sexes so far as I have been able to discover them. No character, however, seems quite constant, so that they must be reckoned in the aggregate and estimated accordingly.

The group as a whole is known by the ♂ frons at vertex being usually about three-fifths of eye-width (in *cotei* a little wider), and usually bearing two pairs of upper reclinate frontal setae (rather variable in number); the ♂ antennae have third joint twice to three times the length of second (in *vicina* rather longer); aristal second joint short; yellow palpi; scutellum usually more or less red, occasionally all dark; 4 D.C.; abdomen with irregular discal setae often short and sometimes failing (in *ingens* apparently always absent), so that in the key they might run either to the species with or those without discals. ♀♀ as usual have frons rather wider and antennae shorter.

E. glirina (Rond.) Pand. = *glauca* auct. *nec* Mg. (fig. 1).

This can perhaps be recognised by form of bending of fourth longitudinal vein. The bend is farther from the hind margin than from the hinder cross-

vein, and in the other four it is nearer to the hind margin: moreover, it curves upwards rather abruptly, nearly at a right angle and then outwards; while in the others the bend is obtuse and the slope even. Also the abdomen is shorter than in the others, rather more of a pointed oval, and in the ♀ usually ends with a triangular fourth segment: this being generally truncate in the other four species.

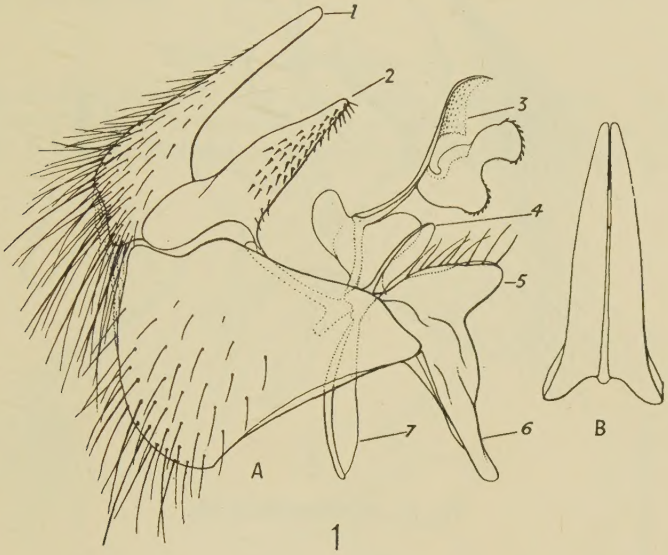

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FIG. 1.—*Exorista glirina* Rond. A. Genitalia as seen in profile. 1. Mesolobe or central clasper; 2. Paralobe or side clasper; 3. Phallosome or penis; 4. Aedeagal style; 5. Posterior part of paramere; 6. Anterior part of paramere; 7. Apodeme of phallosome. B. Mesolobe as seen from above.

Genae narrow, less than antennal width; lateralia one-fifth eye-height; frontal orbits and genae silvery; a few facial setae, only, just above the vibrissae; ♂ antennae with third joint barely twice the length of second, in ♀ less; palpi narrow and round in section; scutellum usually entirely or almost all rufous. Abdomen with wide tomentum bands on front of all three segments. The discal setae very irregular in position and length, never very long and sometimes almost indistinguishable from the regular clothing of long strong hairs; hind tibiae with irregular row of bristles which could not be called comb-like.

Exorista glauca Mg. = *humiliceps* Pand. (fig. 2).

Very like *glirina* but bending of fourth vein different as described above; a little larger, and abdomen rather longer and less oval in outline with the fourth segment more truncate; the scutellum too is usually much darker, and indeed the rufous of it may fail and the scutellum be wholly dark; antennae a little longer, third joint more than twice second; abdominal discals perhaps longer and more distinct: but all the differences are very slight. Palpi much as in *glirina*.

Exorista ingens B. & B. (fig. 3).

Should be easily recognised: the abdominal discals seem to fail completely and excepting for the hind marginals the abdomen is covered with a fairly even clothing of strong moderately long hairs; the hind tibiae have a very regular row of bristles which is

decidedly comb-like; and the palpi are widely spatulate, the width of the broadened portion being equal to about half the length of the same. Antennae with third joint about $2\frac{1}{4}$ times the length of second; facialia have ciliation ascending about half-way up, but the upper

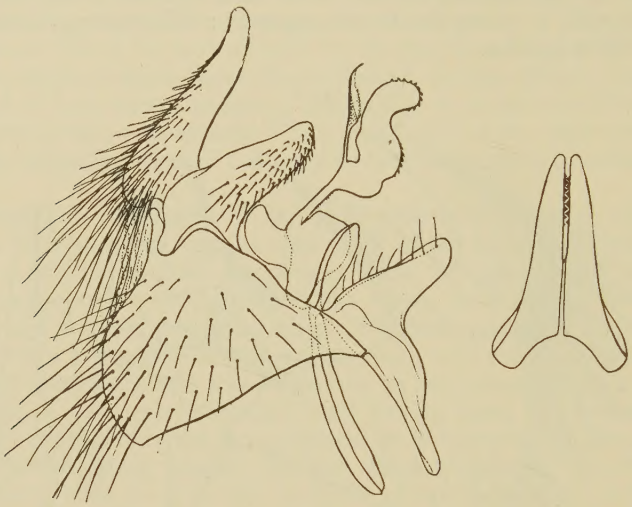

Fig. 2.—*Exorista glauca* Mg.

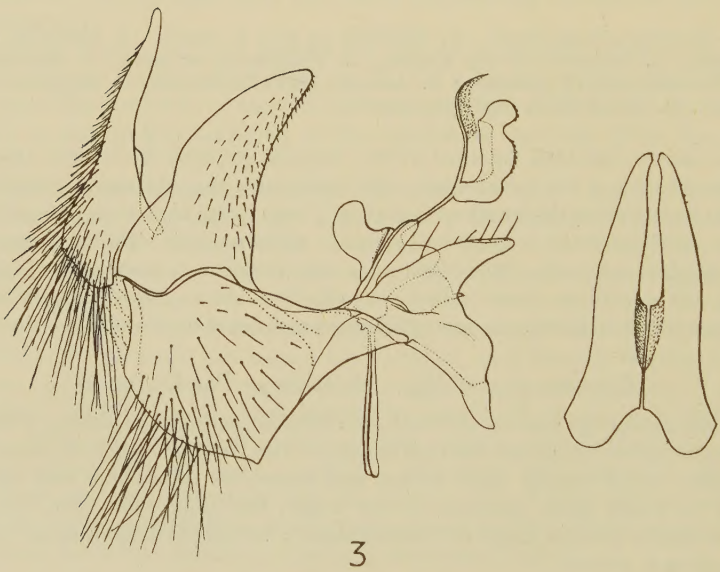

Fig. 3.—*Exorista ingens* B. & B.

setae are very short and fine; the frontal setae descend on to the genae in an irregular group, whilst in all the other four species they form a more or less regular row; frontal orbits and genae are golden; the frons seems rather wider than in *vicina*. Scutellum widely

rufous tipped; general colouring rather bluish; with the markings of the thorax rather indistinct; fourth segment wholly shining, at least in specimen from which the description was taken; bending of fourth vein much nearer hind margin than cross-vein.

This has been described from a single specimen only and some inconstancy may be expected in some at least of the characters observed.

The ♀ I have not yet seen but expect that most of the above characters will be found in that sex also.

Exorista vicina sp. n. (fig. 4).

This species has probably been mixed with *ingens* hitherto. At least the specimens upon which it is founded were so named for me by Dr. Villeneuve, who is still, I believe, inclined to regard them as mere variants of the older

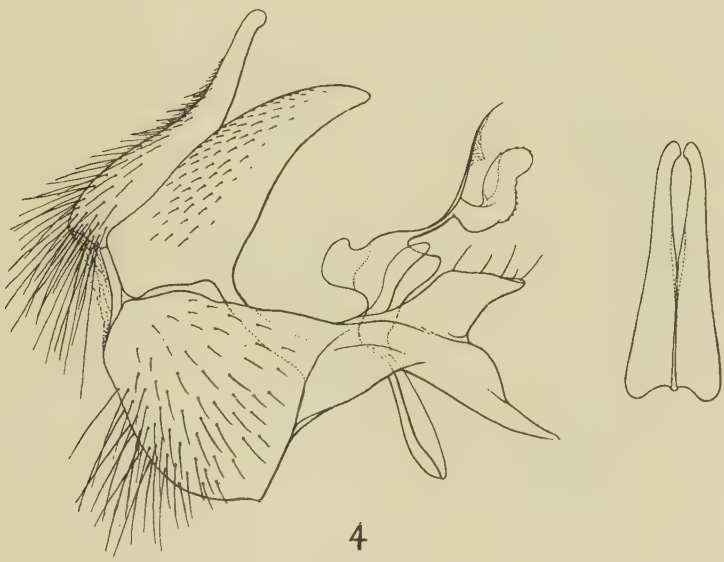

Fig. 4.—*Exorista vicina* sp. n.

known species. To me, however, it seems abundantly distinct, and if my small knowledge of individuals is confirmed with longer series it will prove, I think, one of the easiest to recognise.

It is distinguished by the longest antennae in the group, the third joint in the ♂ being over three times the length of the second; and in the ♀ it is more than twice as long; the frons and genae are golden as in *ingens*; the palpi are widened but scarcely as much as in *ingens*, the broad part being about three times as long as wide; facial ciliation ascending as in *ingens*; all the frontal setae unusually fine. There are irregular but fairly strong and long abdominal discals; the hind tibiae have a comb-like row of bristles but less regular than in *ingens*; the markings on the thorax as in *ingens* are not very distinct; the fourth abdominal segment has the usual band of tomentum; scutellum dark but rufous tipped.

An unusual character is to be found in specimens which I am regarding as ♀♀ of this species: the upper part of the genae below the frontals bearing a small number of short fine setae. Of three specimens possessed by me, two show this peculiarity but the third from Culbin Sands lacks them, and yet

seems to agree in other respects, and of four belonging to Mr. Collin one only from Ardgay lacks them. Villeneuve mentions having specimens referred at the time to *glauca*, which showed this feature, and until many more specimens have been examined it must remain uncertain whether the character is confined to this one species or may occur in others of the group; or how constant it is for this species.

These genal setae are not found in the one ♂ described above but with further material it may prove to occur equally in both sexes. There is also the further possibility that I am wrong in referring any of these 7 ♀♀ to this species, and that the one ♂ described and illustrated is its sole representative. Mr. Collin called my attention to the fact that his 3 ♀♀ with genal setae all lacked the presutural intra-alars : whilst the one from Ardgay with bare genae possessed them; but, as it happens, all mine, the 2 with hairy genae and the

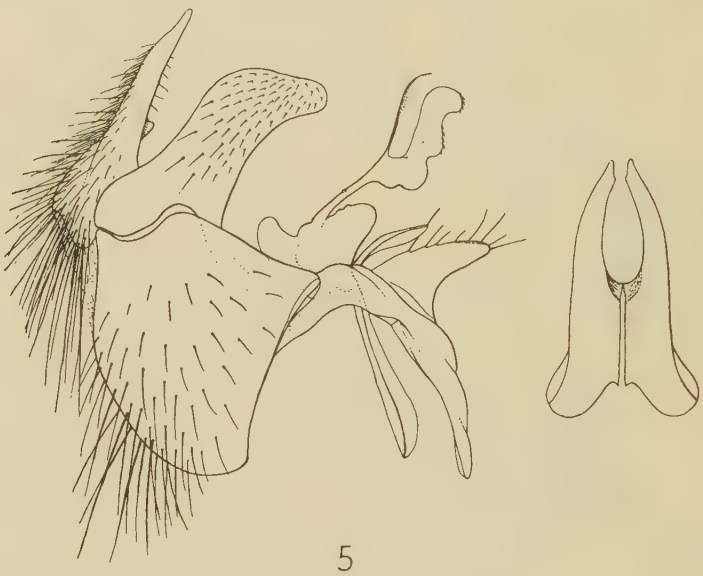

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Fig. 5.—*Exorista cotei* Grilat.

one with them bare, alike possess well-developed presuturals. I think all 7 specimens must belong to *vicina* as all alike possess distinct though irregular abdominal discals, and *ingens* is, I think, characterised by their absence. Incidentally some of these ♀♀ are less golden about the face but that is, I think, due merely to fading with wear, which is always liable to happen.

Exorista cotei Grilat = *quadriseta* Villen. (fig. 5).

Although the genitalia of this species are the most distinctive of the group, yet externally the insect very closely resembles *glirina* and *glauca*. It can probably be most readily distinguished by its greyer appearance, due to a denser and more spread covering of tomentum; also by its somewhat wider frons, this being perhaps four-fifths of eye-width in the ♂. The antennae too are longer; in the ♂ the third joint is quite 2½ times as long as the second, and in the ♀ about twice as long; the palpi are narrow as in *glirina*; the facial setae do not ascend far; it has discal setae but irregular, and the hind tibial bristles are not at all comb-like; the bending of the fourth vein is much nearer the hind margin

than the cross-vein; being separated from the hinder cross-vein by a distance equal to the length of the hind marginal vein, and the bending is somewhat V-shaped, which Dr. Villeneuve says is particularly noticeable in the ♀, for which it may serve as a distinguishing character, together with the grey coloration. The frons is silvery as in *glirina*; scutellum with rufous tip.

There has been much confusion in the past regarding these species and it seems almost certain that most authors have had them mixed, and I hope that I have not added to the confusion. The figures of the genitalia at least should make for clarity, but I fear that some of the other distinctions that I fancy I have observed may not prove to be constant.

The nomenclature unfortunately remains uncertain. I understand from Dr. Villeneuve, to whom I am indebted for much information on this matter, that *glauca* Mg., the oldest name, is represented in the Meigen collection by a single ♀. The females of this group are of course hard to distinguish, and Dr. Villeneuve, I think, has held various opinions regarding the identity of this particular specimen in the course of his investigations, though now he is inclined to the view that it belongs to the species described by Pandellé as *humiliceps* and not to the one hitherto most generally known as *glauca*. This leaves one with the necessity of finding another name for our common species, and Villeneuve advocates *glirina* Rond., which for the time being I am accepting. The type of *glirina* is again, I understand, a ♀; but Pandellé accepted it as belonging to our species, which is certainly *glirina* Pand. if not Rond. This seems almost certainly not only *glauca* of B.T., but also of Stein and Lundbeck, although both of these authors may have had more than one of the species before them. Then Villeneuve described *quadriseta* as a new species, and later himself pointed out that the name had to sink to *cotei* Grilat. *E. ingens* B. & B. seems a good distinct species and our specimen agrees perfectly with B. & B.'s description. It has been suggested that it is identical with *aestivalis* R.-D., but if I understand correctly Desvoidy's types have not had the genitalia examined, and I cannot accept so old a name on such an insecure foundation. Finally *vicina* sp. n. may be considered as a split from *ingens*, with which it has probably been mixed hitherto.

The five species therefore should probably be regarded so :—

E. glauca Mg. (*teste* Villeneuve *sec* type ♀) = *humiliceps* Pand. = *brevifusa* Pand.
E. glirina Rond. *apud* Pand. = *glauca*. Wain. B.T. Stein p.p. Lundbeck p.p. = *clavellariae* var. B. & B. *teste* Villen.
E. cotei Grilat = *quadriseta* Villen. = *triseta* Pand. ?
E. ingens B. & B. Stein p.p. = *aestivalis* R.-D. ?
E. vicina sp. n.

E. glirina Rond. Pand. is the common species of the group and appears to be widely distributed in Europe, and Dr. Villeneuve tells me that he has even received it from the Urals. It seems comparatively common in this country and I have records from many localities and have taken it as far north as Glen Shin in Sutherland, but it has usually only been taken singly.

E. glauca Mg. = *humiliceps* Pand. Is much less common, though only recently recognised so that it may have been overlooked. It was first found by me in the north of Scotland at Culbin Sands and Glen Shin, and so far most of the specimens I have seen are Scotch, but it has been taken at Ham St. Woods, Kent. Perhaps now that attention has been called to it, it may prove to be not uncommon.

E. cotei Grilat = *quadriseta* Villen., is only known as British from a single ♂ specimen in the Verrall collection taken by Col. Yerbury at Tarrington in Herefordshire, 14.viii.97. I wished to illustrate the genitalia of the species even before it was known to be British and sent Mr. Collin a French specimen to work to, and this led to his discovery of the identity of the old specimen.

E. ingens B. & B. Various odd specimens from widely separated localities had been named for me by Dr. Villeneuve as this species, but in the end, as already mentioned, it is believed that two species were included amongst them; and only one ♂, taken by Mr. J. E. Collin at Winterton, Norfolk, 6.vi.1930, belongs to what I believe to be the true *ingens* of B. & B., the remainder belonging to the species described here as new under the name *vicina*. Dr. Villeneuve agreed that the Winterton ♂ was the one which most closely resembled the type of Brauer and von Bergenstamm.

E. vicina sp. n. The specimen that I make the type of this new species is the one from which the drawing of the ♂ genitalia was made by Mr. Collin. This was taken near Cannich, Strathglass, 16.vii.1936, by Mr. Collin and remains in his collection, together with the preparation of the genitalia. A ♀ in my own collection from Catfield, Norfolk, 6.viii.1933, has been labelled as allotype with some hesitation; it at least represents the insect that is here treated as being the ♀ of our species. Others in my collection are one from Culbin Sands, Morayshire (without genal setae), and one from Frog Hall (*Dr. W. J. Fordham*). Those in Mr. Collin's collection are one each from Farley Downs, Hants; Ham St., Kent; Horning Ferry, Norfolk; and one from Ardgay, Easter Ross (this without genal setae).

Attempts to follow rigidly the International Code of Zoological Nomenclature and especially those sections relating to the fixation of types, without regard to the need for uniformity and continuity, are leading certain authors to propose a disastrously confusing reshuffle of some of the most widely known generic names in the Tachinidae. They have arrived at the extraordinary conclusions that *Echinomyia* is to sink into disuse and be replaced by *Tachina* with type *grossa* L.; that *Exorista*, which has been known so long as the name for a group of typical hairy-eyed Tachinids, is to be transferred to the genus so widely known as *Tachina*, with *larvarum* L. as type; and the old genus *Exorista* will apparently disappear in a medley of unfamiliar names. Whilst the disappearance of *Echinomyia* in itself will cause little confusion, the fact that *Tachina* and *Exorista* will have double meanings will cause endless trouble. I hold strongly that the essential requirements are uniformity and continuity, and that any rules or procedure which lead to changes of long- and widely used names are wrong and fail in their main purpose; and I hope that, before it is too late, measures may be taken to prevent many of the most undesirable of the changes at least, either by an alteration of the Code, or by obtaining a ruling from the International Commission placing these names on the list of *nomina conservanda*, the latter being perhaps the most practical immediate method.

Phryxe R.-D. (figs. 6–8).

In B.T. the species of *Phryxe* were included for convenience with the closely allied genera *Exorista* and *Zenillia* in one large group, but it possibly constitutes a good genus even though its limits remain somewhat uncertain.

It may be distinguished primarily by its very broad frons, which at the vertex even in the male is about a quarter wider than a single eye; by its long antennae,

the third joint of which in the male is about five times as long as the second, almost reaching the peristomal edge; by 3 S.P. bristles; and by the trivial but useful character of the upturned pair of apical scutellar setae.

Hitherto two species only have been known as British: namely, *vulgaris* Fall. and *nemea* Mg., and indeed these are the only two generally recognised on the Continent also; circumstances, however, having led me to study the ♂ genitalia, certain differences were found which convinced me that there is at least one other good species, and I believe also a second, which have hitherto been mixed with *vulgaris*.

P. nemea can be separated not only from *vulgaris*, but from both the new species also, through the facial setae ascending but a very little way above the vibrissae, so that a wide gap exists between the uppermost of them and the lowest of the descending frontal setae; also by the generally yellowish tomentum of the face and frontal orbits, but its genitalia are very like those of *vulgaris*. On the other hand, both of the new forms are difficult to distinguish from

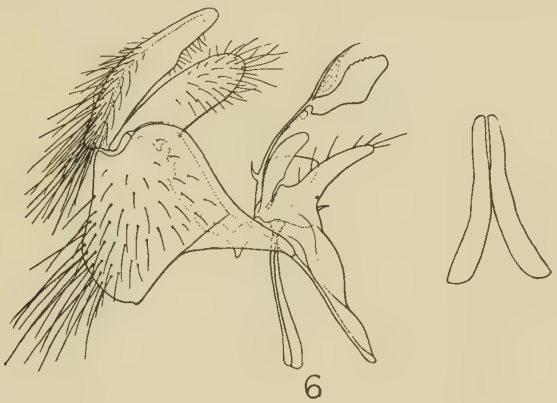

Fig. 6.—*Phryxe vulgaris* Fall.

vulgaris by external characters alone, but have distinctive genitalia. There are, however, slight external differences which may be detected when the species have once been recognised.

As these genitalic characters can best be appreciated from figures, Mr. J. E. Collin has again assisted with drawings of these parts of both the new species, together with those of typical *vulgaris* for comparison (figs. 6, 7, 8).

The one species about which I feel most certain I describe as follows:—

Phryxe longicauda sp. n.

Very like *vulgaris* Fall. and distinguished from it chiefly by the shape of the claspers, both inner and outer, which are decidedly longer and straighter than in either of the other species; the outer claspers are fully four times as long as wide, those of *vulgaris* being barely three times as long as wide at most. See figs. 6 and 7. It seems to be a smaller species, although my largest specimens are as large as many *vulgaris*; also to be rather narrower, most *vulgaris* having the abdomen wider and more oval in shape, though not all; it seems darker looking through reduced tomentum, the scutellum is dark and but slightly tipped with rufous, and the abdomen usually all dark, though occasionally with just a little rufous at sides; the bending of the fourth longitudinal vein is, I think, a trifle more rounded.

I found that as a rule I could pick them out from a mixed series on general appearance, though not always correctly, and I cannot find a really reliable external distinguishing character, so that the ♀♀ remain doubtful at present.

It must be fairly common. The first specimens detected were taken in Glen Shin, Sutherland, in August 1936, but my attention having been called to it, I found that I had others mixed with the *vulgaris* in my collection, and in particular some bred ones received from Mr. E. E. Green, Mr. C. D. Ash, and Dr. E. A. Cockayne. There was a series of 7 ♂♂ and 3 ♀♀ from Mr. Green which had been bred from *Zygaena* cocoons collected in his meadow at Camberley; Dr. Cockayne's were bred, three from *Eupithecia helveticaria* Boisd. from Ballater, in 1934, and one from *Selenia bilunaria* Esp. E. Aberdeenshire, 1934; and two from Mr. Ash were from *Zygaena lonicerae* Sch. from York. Dr. O. W. Richards sent me all his *Phryxe* to look through, and some of them proved to belong to this species, these having been bred from *Zygaena trifolii* Esp., Esher 1928 (*H. R. Hewer*); *Z. filipendulae* L., Princes Risborough 1928 (*H. R. Hewer*);

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Fig. 7.—*Phryxe longicauda* sp. n.

Plusia larva, Torridon, W. Ross, and *Pieris rapae* L., Slough, Bucks. Further, Dr. Richards has recently sent me 24 ♂♂ and 29 ♀♀ all bred from *Zygaena* pupae (mostly *lonicerae* Sch.) from a single field at Slough, Bucks, by Mr. W. H. Goddard. I dissected 12 of the ♂♂ and found the genitalia identical throughout, and the whole 53 specimens are very uniform in appearance, so that it must be regarded as a pure culture of this one form, thus tending to confirm its specific identity.

It will be observed that there seems to be a marked association with the genus *Zygaena*.

An observation made by Dr. Cockayne may indicate a biological distinction. When originally I returned the specimens referred to above, named as *vulgaris*, he expressed surprise because he said that the larvae of these flies had left the host *E. helveticaria* after the winter, and had then formed free pupae, whereas it was his experience that *vulgaris* emerged from the host in the autumn and did not pass the winter as larvae.

In view of the amazing number of names referred to *vulgaris* as synonyms in Kertesz, *Kat. pal. Dipt.*, most of them Robineau-Desvoidy's, it seemed that

it should be unnecessary to propose a fresh name for our species as surely one of Desvoidy's should fit. I therefore sent specimens to M. Mesnil with a request that he would compare them with such of the types of Desvoidy as have survived, and he very kindly did so. He reported that there was one which resembled *longicauda* but unfortunately he added that he had not been able to examine the genitalia of any of the types as the Museum authorities would not consent. As it seems to me that without comparison of these organs there can be no real identification, I cannot feel justified in accepting an old name on such slender evidence, as it would only be chance if it proved correct; and in the circumstances I have thought it better after all to propose a new name about the application of which there can be no doubt.

I have made one of Mr. Green's specimens, a ♂ no. 13795 from Camberley, 24.vii.1932, the type of the species and a ♀ from the same lot, no. 13794, same place and date, allotype, and have labelled them accordingly in my collection. Mr. Collin's figure of the ♂ genitalia was made from a specimen in his collection.

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Fig. 8.—*Phryxe latilobata* sp. n.

Phryxe latilobata sp. n.

The second species, subspecies or whatever it should be called, is illustrated as to its ♂ genitalia in fig. 8. This does not seem so sharply differentiated from *vulgaris* as *longicauda* and as the claspers of normal *vulgaris* certainly tend to variability it might be considered that the characteristic claspers of *latilobata* are only extreme forms of those of that species. I do not think so, however, as there appear to be certain sufficient distinctions, and I am therefore proposing to treat it as a species and if, later, new evidence should prove that it is only a subspecies or even mere variety, yet it will still be a distinct entity and the name useful.

The figures show the differences between the genitalia of the new species and *vulgaris*, and although some of the latter species do certainly possess wider side claspers than shown, yet none of them has them nearly so wide in proportion to length as *latilobata*, in which they are barely twice as long as wide; and the peculiar projection on the underside of the mesolobe seems especially characteristic if it should prove constant (a slight similar projection can be traced in *vulgaris* but it is not conspicuous as in *latilobata*). Externally I admit that there seems no sufficient distinction. Perhaps in *latilobata* the third

joint of the antenna is thinner and so longer in proportion to its width than in *vulgaris*; perhaps the tomentum is rather less spread so that *latilobata* has wider shining hind margins to the abdominal segments, this being particularly noticeable on the fourth, where almost the hinder two-thirds are shining. There seems a tendency too for the fourth longitudinal vein in *latilobata* to bend more sharply, at a right angle, and then to curve outwards similar to that of *glirina* Rond.; whilst in *vulgaris*, it bends more obtusely and runs with but slight curve to the margin. I think too that the frons of *latilobata* is a little narrower than that of *vulgaris*, and that whilst the frontalia seems about the same width as the orbits in *vulgaris* it is rather wider in proportion in *latilobata*; or one might say that the orbits are a little narrower in *latilobata* than in *vulgaris*. I fear, however, that none of these external characters is decisive and that it will be necessary to depend finally on the genitalia.

All that was said regarding the naming of *longicauda* applies equally to the present species. It is most unlikely that Desvoidy had no specimen of it amongst the many he named, but which of his names should be used can only be decided by examining the genitalia of all the types, which cannot be done at present. His descriptions are hopeless.

There is, however, another name which has worried me, namely *heraclei* Mg. This seems to be a recognised form on the Continent, perhaps as a variety of *vulgaris* rather than a distinct species. Dr. Villeneuve tells me that it is distinguished by rufous sides to the abdomen in both sexes, but many of what I regard as true *vulgaris* also have them rufous, and red sides are not characteristic of *latilobata* any more than of *vulgaris*. M. Mesnil informs me that he distinguishes *heraclei* by the form of the antennae and the presence of some hairs on the genae below the frontals, but he regards it as a mere variety of *vulgaris*. I have observed no specimens of *vulgaris* or *latilobata* with genal hairs, so perhaps I have never seen true *heraclei*, although various specimens of both of my forms have been so named for me by Dr. Villeneuve. It seems to me that *heraclei* will prove to be a mere synonym of *vulgaris*, and at any rate can scarcely be our species.

There is, however, a further difficulty about this name *heraclei*. Meigen described it from females and distinctly said that he did not know the male. Stein, in his review of the Meigen types, described a male: where did it come from? There can be no question of mistake about sex as Meigen describes his species as having the third joint of the antennae three times as long as the second; and Stein, of the male he saw, says it is five times as long. Dr. Villeneuve, in writing to me about the type, speaks of it as a male, and quotes the fact that the Museum authorities will not permit examination of the genitalia; but how does a ♂ come to be the type of a species so clearly described from a female, with male unknown! !

P. latilobata does not seem to be common. I have only 4 ♂♂ of which I feel certain, 2 from West Runton, and one from Upton Broad, Norfolk, and one from Abbotsbury, Dorset. Mr. J. E. Collin has a ♂ and 4 ♀♀ bred years ago by Bignell from *Cosmotriche potatoria* (L.). The ♀♀ having apparently been bred with the ♂ may be regarded as being most probably specifically identical; they are certainly characterised by more or less rufous at the sides of the abdomen and the ♂ and one ♀ were amongst the specimens seen by Villeneuve and pronounced to be *heraclei*. The one ♀ seen by Villeneuve, however, happened to show the greatest development of the red markings, these extending along the sides of three abdominal segments in this one specimen only: in the others there was much less of the red colour, and in one a very little on one

segment only. This may be taken as good evidence that the colour character is of no reliable distinctive value.

It is obvious that with these two new species hitherto mixed with so-called *vulgaris* Fall. and one at least of which would seem to be common, all previous records of *P. vulgaris* must now be regarded as suspect.

I have made the ♂ from Upton Broad in my collection the type of the species, and labelled it accordingly; but I have not designated a ♀ as allotype although Mr. Collin's four specimens probably correctly represent the species and might be so regarded. The figure of the ♂ genitalia was made from a Continental specimen without data found by Mr. Collin in Bigot's collection, which is in his possession; this must be regarded as a paratype: and has been so labelled.

Since writing the above Mr. Collin has found *vulgaris* exceedingly abundant at Chippenham Fen on 28 August, 1939, and taken a considerable number of them; with them were 3 ♂♂ of *latilobata* which I have seen and which agree in every respect with those known previously. I did not, however, have an opportunity of examining the specimens rejected as *vulgaris* and of ascertaining the amount of variability displayed by them.

Hemimacquartia B. & B.

Mr. J. E. Collin took at Aviemore, 26.v.1934, a single ♂ of the little-known *Hemimacquartia paradoxa* B. & B. It is closely allied to *Exorista* but can be clearly distinguished from any member of that genus by its very large antennae. The face is long, the base of the antennae not much below the level of the top of the eyes, the second joint is short and rather small, but the third reaches to the mouth-edge, and is about five times as long as the second, and is very wide also. Viewed in profile, it is produced abruptly and considerably farther forward than the second. Another distinctive character is that the bases of the wings and the squamae are conspicuously yellow. In the key in B.T. it runs to 81, where it has to be compared with *Exorista*, from which it is separated at once by the above characters.

The frons is of eye-width, genae one-third narrower than the antennae and lateralia about of antennal width; frontalia, antennae, legs and scutellum all black; palpi rufous; thorax glossy black with scarcely any trace of tomentum; 4 D.C. Abdomen rather flat, shining black, with white tomentum, front marginal bands occupying nearly one-third of each segment, with a wide dark dorsal central line; no discal macrochaetae on second and third segments and marginals not strong. Bending of fourth longitudinal wing-vein near to hind margin. The ♀, which I have not seen, is said also to have the third antennal joint broader than the second but not so conspicuously as in the ♂, and the thorax to bear some brownish tomentum and to show 4 stripes.

As the species is not easily recognisable from the descriptions, I submitted the specimen to Dr. Villeneuve for confirmation and he tells me that it is in accordance with the type.

Aporotachina Meade.

A. angelicae Mg. was discovered by Mr. J. E. Collin at the Devil's Ditch, near Newmarket, on 24 June, 1936, when he caught one ♂. On the 27th he took me to the spot, when he obtained two more, both ♂♂, and I also caught one but lost it. This is all I know of it as a British insect at present.

In the key in B.T. the species runs down to *Lydella albisquama* Zett. at couplet 129, and might be compared with the genus *Lydella* generally, with the

species of which it has usually been associated. It is a well-characterised species and easily distinguished from *albisquama* and the rest of the species placed by me in *Lydella*, and indeed is sufficiently different, probably, to justify placing it in a separate genus as done by Villeneuve, who has resurrected Meade's name *Aporotachina* for its use.

It can probably be recognised at once by the setose third longitudinal wing-vein; elongated second joint of antennae; general blackish coloration; 3 D.C. and yellow palpi.

The frons at vertex (♂) is barely four-fifths of eye-width; the frontalia dark and wider than the orbits; the vibrissaria a little above the peristomal edge; the wide genae are fully twice the width of third antennal joint and the lateralia wide and equal to half the height of an eye, which means of course that the eyes are comparatively small. Two pairs of recurved preverticals; the frontal setae descending on to genae in a bunch; some bristles on facialia ascending about one-quarter of way up. The antennae are distinctive, the second joint being lengthened almost as in the genus *Tachina*, the third being only about one-third longer; arista short and thick in basal portion. Palpi yellow. Thorax, abdomen and scutellum black, with the usual silvery tomentum, leaving four black streaks on thorax; a broad central line on abdomen, and dark hind margins. Strongly setose; 3 D.C. and full series of acrostichals; long and strong discals and marginals on abdomen, but apical scutellars small, fine and crossed. Fourth wing-vein bent at an obtuse angle, about midway between hind margin and hinder cross-vein, no cubital appendage; apical cross-vein straight. Costal thorn strong, and there is on the third longitudinal vein a sparse row of setae reaching nearly to the discal cross-vein.

The name occurs in the Verrall List, and Meade may really have known this actual species, although it is not to be found in his collection, and I suspect that his and other old records of *angelicae* in Britain were based upon specimens of *Lydella nigripes* Fall. If I am right, the name *Aporotachina* cannot be used for the present species. I am far from sure that this is the true *angelicae* of Meigen, as indeed of most authors, for Meigen says that the antennae of his species have the third joint twice as long as the second, and that the frontal setae descend to the level of the middle of the antennae; and succeeding authors, Schiner and Meade in particular, say the same. Stein seems to have had our species but made no reference to the antennae, and it is Lundbeck who first gave a clear description, with which our insect agrees in every respect, and for the moment I accept the name and identification based upon Lundbeck.

Dexodes spinuligerus (Rdi.) B. & B. has been treated as a synonym but Brauer & von Bergenstamm's drawing shows an insect with antennae too long for our species.

Microvibrissina.

According to Dr. Villeneuve *Tachina muscaria* Fall. (sec. typ.) proves to be the species we have been calling *Ceromasia sordidisquama* Zett., and as it seems out of place in the genus *Ceromasia* he proposes that we should use Robineau-Desvoidy's generic name *Oswaldia* for it: the name of this common fly thus becoming *Oswaldia muscaria* Fall.

The species called *Microvibrissina muscaria* in B.T. is thus not Fallen's species but is apparently what Meigen knew as *Tachina muscaria* Fall., and this has continued to be referred to as *Microvibrissina muscaria* Mg. *nec* Fall. This, however, is a clear case of homonymy, and as confusion seems likely to result from its continued use, it seems to me that it needs a new and distinctive name, and I propose, therefore, **Oswaldia villeneuvei** nom. n. in compliment to my friend Dr. Villeneuve de Janti, to whom dipterology owes so much.

Erynnia nitida R.-D.

This little-known species was recorded from some specimens taken by Mr. Collin at Barton Mills in 1933. In 1937 it was taken by me at Dungeness on 5 August; and then by Mr. Collin firstly at Tuddenham on the 23rd of that month, and then again at Barton Mills on 3 Sept., and at both of these two latter places it occurred in considerable abundance, so that Mr. Collin was able to take as many as he wanted without difficulty. Amongst the Tuddenham ♂♂ there was a remarkable tendency to abnormal development of the antennae. I have at least 8 specimens in which the third joint is more or less swollen and produced hump-like in front.

It should be noted that our species is *Erynnia nitida* Rob.-Desv. and is not the same as *nitida* Rond., which has been renamed by Dr. Villeneuve *Anachaetopsis nitidula*. The genus *Erynnia* is distinguished from *Anachaetopsis* not only by absence of orbitals but also the depression on the first tergite extends to the hind margin of the segment in *Erynnia*; whilst in *Anachaetopsis* it ceases some distance from the hind margin and the whole segment is much longer.

Hypochaeta inepta Mg.

In B.T. : 194 I suggested that this seemed to be a northern insect, and our experience in Scotland during the last 3 or 4 years tends to confirm this view, as we have found it widely distributed there and fairly common in many places. I have also found it on Whixall Moss, Salop, in conditions resembling the Scotch ones, flying low over the heather, so perhaps it is a moorland rather than a northern species. I believe, however, that Whixall Moss is known for a fauna normally characteristic of more northern habitats. More recently, at the end of June 1939, Mr. Collin found it occurring in some abundance at Barton Mills, Suffolk. I believe that other northern species have also been taken there, otherwise it seems to show that the species is not exclusively northern in its distribution.

Tritochaeta B. & B.

Tritochaeta pullata Mg. is added to the British list on the strength of a chance specimen taken by Mr. J. E. Collin on 6 August, 1938, on Soakham Down, Kent. In the key in B.T. it runs down readily to couplet 73 with *Pales* R.-D. and need only be compared with the species of that genus, to which indeed it is very closely allied. *P. pavida* Mg. is a larger, more robust, and bluer-looking insect, with rather slight tomentum thinly covering the shining blue-black abdomen. *T. pullata* is decidedly smaller, has much denser tomentum, which is brownish, and the abdomen does not appear shining. *P. pavida* has all black palpi; *pullata* more or less yellow. *P. pavida* has a strong pair of apical scutellars as thick as the other marginals; in *pullata* the apicals are thin. *P. pavida* has 4 or 5 long, strong bristles on upperside of front tibiae near the base; *pullata* shorter ones. The ♂ genitalia seem very different, those of *pavida* long and pointed; those of *pullata* shorter and broader. This is a good reason for not regarding them as belonging to the same genus. In most other respects the two species resemble one another. *P. pavida* has yellow tibiae with a comb-like regular row of bristles on the hind pair; *pullata* has all black legs with an irregular row of bristles, but *Pales pumicata* Mg. is possibly only a variety of *pavida* which resembles *pullata* in these respects.

T. pullata appears to be a common species on the Continent, so may prove not uncommon here now that attention has been drawn to it. It is recorded

as a parasite of the Pyralid *Phlyctaenodes sticticalis* L. The species has been placed in the heterogeneous genus *Zenillia* by various authors, but I think Stein was right in associating it with *Pales*.

Graphogaster brunnescens Villen.

This also seems to be a northern insect, though not common like *Hypochaeta inepta*. It is particularly at Culbin Sands that it has been found, and Mr. Collin and I have taken it there each time we have visited the locality, but only a few on each occasion; we have also taken it in Glen Shin, Sutherland, and at Grantown-on-Spey. It is strange that the first British specimen should have come from Tunbridge Wells and none other has since been taken south of the Tweed.

Eutachina baranoffi Wainw.

Since the publication of the first supplement this new species was described by me in the 1933, *Ent. mon. Mag.* **69** : 160, with a figure of the genitalia. In 1938 one ♂ and one ♀ were taken by me on Rhododendron bloom at the Beaulieu Road Hotel, Hants. So far all of the few specimens known are from the New Forest.

According to the law of priority it is argued, as mentioned under *Exorista*, that the genus with type *larvarum* L., and including *baranoffi*, must be called *Exorista*. M. Mesnil, who is working at this group, informs me that he has found amongst some recently discovered types of Desvoidy's a specimen agreeing with our *baranoffi* bearing the name *Tachina delicatula* ; and possibly one may ultimately have to accept *delicatula* R.-D. as the name of this species, although it was based on an entirely meaningless description, whilst the name *baranoffi* was accompanied by figures ! ! As already mentioned, however, apparently these types of Desvoidy's have not had the genitalia examined owing to the refusal of the authorities to permit any interference with them, so that it would seem that the identification must remain doubtful at present and in the meantime it will be better to continue to use our name *baranoffi*.

Germaria R.-D.

In B.T. : 199, when recording *angustata* Zett. as a British insect, reference was made to the fact that *ruficeps* Fall. had long been included in lists of British Diptera but that I had not then come across an undoubted British example. Recently, however, Dr. B. M. Hobby detected a specimen in the Chitty Collection at the Hope Museum, Oxford, which I have had an opportunity of examining. It is a ♀ and is labelled " Hntg'field 31.7.1904. A. J. Chitty," presumably meaning Huntingfield in Suffolk, and there seems no doubt that it is really *ruficeps* of British origin.

Stein says that there is not much difference between *ruficeps* and *angustata* excepting in size, *ruficeps* being markedly larger than *angustata* ; but he adds that *angustata* ♂ has no orbitals and *ruficeps* ♂ has; further, that in *angustata* the hind marginal cell is closed and sometimes even short stalked. I have not found any material difference in the venation myself, the hind marginal cell being just a little open in all the specimens of both species that I have examined. *G. ruficeps* ♂ does bear well-developed orbitals but in *angustata* there are irregular bristles on the front orbita outside the frontal series and at times some of these might be regarded as orbitals. Size is, I believe, a real distinction here, *angustata* under 10 mm. long, *ruficeps* 12 mm. or more; but

ruficeps is also more robust in every way, stouter and with thicker setae. There are differences in the comparative lengths of the joints of the antennae and aristae; in *angustata* ♀ the third joint of antennae is about half as long again as the second; in the ♂ barely two and a half times; in *ruficeps* twice as long in the ♀ and nearly three times in the ♂. The third joint of the arista appears shorter or at least no longer than the second in *angustata*, in *ruficeps* it is a little longer. A minor but I think constant difference is that the humeri are all black in *ruficeps* and a little rufous in *angustata*.

Lundbeck says that the antennae are black in *angustata* and in *ruficeps* have the second joint red: in my *angustata*, however, the second joint is rufous as in *ruficeps*. They are evidently variable species and perhaps none of the characters is constant.

G. angustata appears to have occurred only on the sea-coast in various countries, whilst *ruficeps* seems mainly to have been taken inland.

Gonia Mg.

Until this year, in my experience, *Gonia fasciata* Mg. had always proved itself to be a rare fly, although I had met with it myself in three separate places and had records of its occurrence in nearly a dozen other localities. A visit to Eastbourne at Easter (1939), however, revealed the fact that it was a common species on the Downs in that neighbourhood, and in the fine weather experienced at that date was seen in some numbers flying low over the old brown-tufted grass slopes. It flew low, settling after short flights, and had a habit when struck at of descending into the grass and disappearing from view, rather than flying away. We found it wherever we went on suitable terrain, on Malling Hill, near Lewes; near Jevington; about Beachy Head; and at Milton Hide by Abbots Wood.

We were unable to form any opinion as to the disputed question of its hosts, as although almost certainly it was engaged in searching for something, yet it might equally well have been for early nests of the Bombi, or lepidopterous larvae at the roots of the herbage. In 1908, however, I certainly found the flies at a colony of *Anthophora* sp. near Ventnor and they appeared to be associated with the bees; on the other hand, I have a record of a specimen being bred from a larva of *Leucania comma* L. found at Wye, by Mr. A. E. Tonge.

Plagia Mg.

In the key in B.T. *Voria* will be found both at couplet 83 amongst the species with hairy eyes and at 112 amongst the bare-eyed forms; more correctly the name *Plagia* should have been employed in the first case. At the time of publication in 1928 no British member of the hairy-eyed group was known to me, all the species dealt with on p. 200 having bare eyes; but I am now able to add *Plagia ruricola* Mg. to our list.

The species was found on Wye Downs, Kent, in May 1936, at flowers of *Euonymus*, when Mr. Collin and I each took a single specimen. Unfortunately the hairy eyes were not detected in the field and the next morning we had to leave for home, otherwise probably more would have been obtained.

The species should be easily recognised as it has the typical *Voria* venation with the very slanting postical cross-vein, which slants even more than in *Voria ruralis* Fall., ending below, almost directly under the small cross-vein; further, the bending of the fourth longitudinal vein is as far from the hind margin as it is from the small cross-vein. Also it has characteristic genal setae, which

again are more developed than in the other species, constituting almost a full series of 9 or 10 long strong bristles, with intermediate weaker ones, extending from the praeverticals to the edge of the mediana, and all curved downwards. These characters, combined with the conspicuously hairy eyes, will enable *ruricola* to be distinguished with certainty from any British species. The basal two-thirds of the arista is thickened, and the second joint is lengthened, being about twice as long as wide; palpi are black; there are no discals on the abdominal tergites and there is a row of setae on the third longitudinal vein extending to the small cross-vein.

P. nigripalpis Rond. is generally regarded as being merely one form of *ruricola*, a variable species; my Kent specimen, however, belongs to this form and it will be interesting to see if it is the usual one here. Swiss examples that I possess are larger and have denser tomentum so that they look greyer than the Wye individual, and usually have yellow palpi, whilst those of *nigripalpis* are black.

Wagneria R.-D.

Amongst some insects sent to me for identification by Mr. R. L. Coe I found a single ♂ of *prunaria* Rond. taken by him on Cairngorm at 3200 feet on 26 June, 1933. It is one of the group of small species of this genus, comparing in size etc. with *nigrans* Mg., but it has antennae large and long as in *latifrons* Zett., and the first longitudinal wing-vein is setose. The third vein also is setose as far as the discal cross-vein; there are discals on the abdominal segments; the hind cross-vein is in the middle between the discal cross-vein and the bending; and the palpi are yellow.

There has been much confusion in the nomenclature of the small species of this genus and scarcely two authors have agreed as to the use of the names. Dr. Villeneuve, however, in a valuable paper in 1931, *Konowia* **10 : 59–60**, criticising Stein's *Die verbreitesten Tachiniden Mitteleuropas*, has assisted materially to clear the air. Accepting his views, the oldest name *carbonaria* Panz. (Fall. Zett. *nec* Mg. Stein) belongs to the species recorded in B.T. : 201 as *nigrans* Mg. The present species for which *prunaria* Rond. should be used is *carbonaria* Mg. Stein *nec* Panz. and is also *cunctans* Sch. *nec* Zett. Mg.

W. latifrons Zett. was found on Wye Downs, Kent, in May 1936, by Mr. Collin and myself. It was rare, but enough specimens were obtained to confirm some of the previous conclusions. The ♂ certainly seems to show the unusual character of a frons wider than that of the ♀. It has black palpi and incurved hind marginal cross-vein. The Wyre Downs specimens all had quite clear wings, those from Wye Forest taken in the autumn had darkened veins. This may be due to some immaturity of the spring examples.

W. succincta Mg. is still very little known by me and I am anxious to see more specimens.

Blepharomyia B. & B.

The little-known species *collini* Wain. was found at Loch Garten on 21 May, 1934, when Mr. Collin and I each took several specimens. The weather was unfavourable, otherwise more might have been obtained and unfortunately we have not been able to visit the locality since at a suitable date. It was evidently at home there, flying low down over the bilberry growing beneath the pine trees.

In a ♂ *amplicornis* Zett. from Carbis Bay (*Rev. A. Thornley*), whilst the characters of the frons as quoted by me in B.T. are sustained, those of the

abdominal setae fail, for the second segment has a full series of marginals and even the first has the intermediate ones weakly developed.

Neaera R.-D.

N. albicollis Mg. proves to be common locally. It seems to be one of the Downland species, as it is on chalk only that it has occurred at present. It was plentiful in Sussex in 1938 at various places, and is also abundant at the Devil's Ditch at Newmarket and at Fleam Dyke in addition to its original locality at Aston Rowant.

Digonochaeta Rond.

To the last complete line under this heading after 1st and 3rd, add " and 5th."

Actia R.-D.

An addition to the British list is *A. silacea* Mg. This very distinct species was taken by Mr. Collin at Chippenham Fen on 10 July, 1932, when two ♂♂ were obtained, and a ♀ was taken there on 27 July, 1934. It is one of those species which can scarcely be mistaken. It is almost wholly yellow with shining yellow thorax and abdomen, and there are setae on the first, third and fifth longitudinal veins and so far as I know there is no other *Actia* with which it could be confused. It appears to be a rare species everywhere, and it is certainly remarkable that Mr. Collin, who has collected at Chippenham for years, should never have met with it before, as it is not an insect likely to be overlooked.

A. verralli Wain. also seems very rare. It was described B.T. : 208 from a single specimen taken at the Mound, Sutherland, and only two more have been taken since, both at Grantown-on-Spey, one by Mr. Collin on 4.viii.1935 and one by myself on 13.vii.1938.

A. bicolor Mg., on the other hand, proves to be a comparatively common species in the north of Scotland, where it is not infrequently obtained when sweeping birch trees. In 1938 also I found it at Whixall Moss, Salop, where it occurred in similar conditions to the Scotch ones, being swept from silver birches growing on heathland very like Scotch moorlands.

A. anomala Zett. is another species that seems at home in the far north, where though less common than *bicolor* it has been obtained in most localities visited, and was also taken with *bicolor* at Whixall Moss.

Trichoparia R.-D.

T. blanda Fall. Of this species specimens have been taken at various places since it was first recorded : at Horning Ferry, Norfolk ; Shobdon, Herefordshire ; Loch Tummel, Perthshire, and Cannich in Strathglass, and one day in August 1937 Mr. Collin found it at Chillesford Decoy near Orford, Suffolk, when he obtained 9 ♀♀.

T. seria Mg. has also been found in small numbers in Scotland, in various localities and especially in Frenich Wood on Loch Tummel, Perthshire, where a small series was obtained.

Loewia Egger.

L. foeda Mg. (= *intermedia* Brauer) occurs in Ham St. Woods, Kent, where Mr. Collin and I obtained it in 1937. It is evidently at home there though far from numerous and difficult to take. It was found on the paths, which were

dried and cracked, and it seemed to be running about, in and out of the cracks, as if in search of something, presumably a host for oviposition; all we took were ♀♀, which seems to confirm this supposition. There were many hunting spiders there and although the flies were not like the spiders in appearance yet their movements were similar and it was not at all easy to spot the flies or to catch them. They flew very little and seemed to hide in the cracks, or to escape by running rather than by flight.

Ptilopsina Villen.

The discovery amongst Mr. J. E. Collin's captures from Scotland in 1936 of a single ♀ of the little-known *Ptilopsina nitens* Zett. from Grantown-on-Spey led to a special search for it in June 1937, when Dr. C. G. Lamb, Mr. Collin, and I revisited the district. Although far from abundant, it proved to be well established on the rough ground on the right bank of the Spey above the New Bridge, and steady sweeping, especially of the low-growing aspens, led to the capture of about 50 specimens in all. Unfortunately it is rather a fragile insect and most of those taken were more or less damaged.

At the first glance it was taken for *Minella nigrita* Fall., which it resembles closely, and indeed Bezzi in the *Katalog* actually places it in the genus *Minella*, and Stein treats it as a near ally. Careful examination, however, reveals important differences. Villeneuve has erected the genus *Ptilopsina* for it, and it seems to me that it should be removed from the neighbourhood of *Minella* altogether and is more nearly allied to *Loewia*. Of course it has no stalk to the hind marginal cell as found in *Loewia*, but the form of the head as seen in profile is similar, and in the key in B.T. it runs out near to that genus, at 52, where it has to be compared with *Medoria*. *Medoria* has silvery bands of tomentum on the abdomen; three marginal bristles on each side of the scutellum, and well-developed presutural acrostichals; whilst *Ptilopsina* has no silvery tomentum anywhere; no presutural acrostichals; and only two fine marginals on each side of the scutellum.

♂. It is a small shining black species about the same size as *nigrita* Fall. but not so shining, as in certain lights one sees that the thorax and abdomen are covered by a very thin brown tomentum. The chaetotaxy is very weak throughout; there are no presutural intra-alars as well as no acrostichals; no marginals even on the unusually long first abdominal segment, and no discals on the second, but short discals and marginals on the third and fourth; D.C. 3 post- and 2 presutural. The head is of the rounded *Loewia* type with profrons not prominent; the eyes closely approximated; the antennae inserted below eye middle; antennae short with third joint not twice length of second; palpi flattened and rufous; eyes bare; proboscis short, shining and swollen; no ocellars; vibrissaria placed above the flattened epistoma; wings darkened, especially at base; fourth longitudinal with round bending which runs very close to the hind margin; cell open at tip of wing; hinder cross-vein nearer to the small cross-vein than to the bending; squamae very dark, blackish; legs, antennae, halteres, all black; claws and pulvilli developed.

♀. Resembles the ♂ in most respects but is a paler insect; the palpi are bright yellow, the squamae and base of the wings also yellowish, and there is no darkening of the wings as in the ♂. Frons at vertex about eye-width; ocellars and orbitals present.

It seems to be a rare species everywhere; Zetterstedt recorded it as very rare, and Stein appears to have seen only 4 odd specimens from localities, however, as far apart as Lapland and Tyrol.

Zophomyia Macq.

Z. temula Scop. is proving to be fairly common locally; it was in some numbers in a meadow at the foot of Cader Idris, near Dolgelley, on 10 June, 1934; and is to be found freely in the Devil's Ditch, Newmarket.

Demoticus Macq.

D. plebejus Fall. is another species formerly regarded as rare, and now known as a Downland insect. It was fairly common in Sussex in 1938 especially on Malling Hill near Lewes; also in the Devil's Ditch near Newmarket, and I have taken it near Cranham on the Cotswolds and have other records.

Rhinotachina B. & B.

A mistake occurs in the short description of *modesta* Mg. The palpi are yellow not black.

Bithia R.-D.

The palpi in *spreta* Mg. too are not always black; they are sometimes pale. In the 7th line insert after 1st and 3rd " and 5th."

Lophosia Mg.

Further localities for *L. fasciata* Mg. are Farley Mount, Hants, where Mr. Rivenhall Goffe discovered it, and it has been taken on various occasions since; Streatley Downs, Berks, and Ham St. Woods, and Soakham Down, Kent; so that though rare this striking species is evidently widely distributed.

Rhinomorinia B. & B.

The species recorded by me B.T. : 225 as *Rhinomorinia puberula* Zett., although placed in the genus *Rhinomorinia* by Bezzi in the *Katalog*, and also by Stein, is really a Calliphorine, very closely related to the genus *Onesia*, and Villeneuve has erected a genus *Pseudonesia* for it. He has also pointed out that *pubicornis* Zett., which has page priority, is the same species and so that name replaces *puberula*.

It is apparently a northern species and seems to be at home in the Highlands of Scotland, although very rare, but possibly overlooked. On one occasion on a hillside above Glen Shin in Sutherland it was found by me settling on boulders amongst the heather etc., and possibly had the weather not been unfavourable we might have secured a fair number; as it was I took 4 pairs. Otherwise it has only been obtained as odd specimens at Aviemore and Culbin Sands. It has also been recorded from St. Kilda, 1932, *Ent. mon. Mag.* **68** : 264–5.

Sarcophaga Mg.

In B.T. : 227–231, 25 British species of this genus were recorded; in the first supplement were added three others; and now there are still three more to report, making a total up to the present of 31; and it seems most probable that there are still others to be discovered here yet.

Of the three recorded on the last occasion, it now seems probable that the red-tailed one, referred to as *tuberosa* var. *exuberans* Pand., is distinct from the red-tailed insect known as *exuberans* on the Continent. Several species or subspecies very closely allied to *tuberosa* have recently been described by Rohdendorf and others, and ours does not seem to agree exactly with any one

of them, and I have not yet been able to form a definite opinion as to the status of our insect. At present we have only 4 ♂♂, each taken in a different year at Blakeney, and 4 ♀♀, and it is desirable to get a fairly long series of them for a sound judgment to be formed. It is, however, possible that it constitutes a distinct subspecies.

S. similis Pand., previously known from a single specimen taken at Arne in Poole Harbour, was taken on Hengistbury Head on 4 June 1938, by Mr. Collin and myself, the species having been recognised amongst captures made there the previous day by Mr. Collin. It was uncommon, but short series were obtained.

The three present additions are *arcipes* Pand., *laciniata* Pand. and *albiceps* Mg.

S. arcipes is a near ally of *pumila* Mg. but owing to the red genital segment runs down in my key in B.T. to *ebrachiata* Pand. at couplet 7. It resembles *ebrachiata* so closely that although easily distinguished from it when the phallosome is examined, it is not easily recognised from external characters alone. They can, however, perhaps be separated by the first all-black genital segment which is shining without tomentum in *ebrachiata* but has a conspicuous patch of pale tomentum behind in *arcipes*. Also *arcipes* has a well-developed costal thorn, which is absent or small in *ebrachiata*.

It is with *pumila*, however, that *arcipes* has chiefly to be compared. In *pumila* the genital segments are normally all black; the second one often shows a touch of rufous and occasionally this segment is nearly all red, but rarely if ever so completely and conspicuously as in *arcipes*. *S. arcipes* is normally a larger and more robust-looking insect than *pumila*, although *pumila* varies much in this respect and occasional specimens are as large as *arcipes*. *arcipes* has apical scutellar setae which are absent in *pumila*. Even without examination of the genitalia the species should be recognised by the above characters, but the form of the claspers would settle any doubts: these are quite straight in *arcipes* and distinctly bent inwards at an angle at the tip in *pumila*. The phallosome is much the same in both species.

♀♀. The females may perhaps be identified by the more or less red tip to the abdomen and the presence of the apical scutellar setae.

This species was discovered by Mr. J. E. Collin at the Devil's Ditch near Newmarket, where it is apparently quite common, and he has very kindly sent a nice series for my collection. Curiously although many ♂♂ have been taken the ♀♀ seem scarce and very few have been found so far.

S. laciniata Pand. In the key in B.T. this species runs to 19, where therefore it has to be compared with *melanura* Mg., *incisilobata* Pand. and *hirticrus* Pand. *S. melanura* is easily distinguished by its wide frons and yellowish tomentum; *laciniata* having a frons only about half an eye-width, and whitish tomentum. *S. melanura* also has the first genital segment all shining, whilst in the other three species concerned it is covered more or less with tomentum. *S. hirticrus* is characterised by much long pilosity on the hind and mid tibiae and also on the genitalia, *laciniata* having only moderate pilosity behind the hind tibiae. *S. incisilobata* is more like *laciniata* in general appearance, but *laciniata* has a row of hind marginal setae on the first genital segment, which fail in both *incisilobata* and *hirticrus*, and this character alone should enable *laciniata* to be distinguished. The phallosomes of these four species are all very different from one another: that of *hirticrus* very simple, almost devoid of processes; *melanura* comparatively simple but with a conspicuously hooded end; and the other two very complicated with varied processes requiring

drawings for their elucidation. *S. incisilobata* has been illustrated by Prof. Patton in our joint paper in 1937, *Ann. trop. Med. Parasit.* **31** : 315, and it is hoped that *laciniata* will be shown in the next part. This species was discovered in the Ham St. Woods, Kent, where I first found it in May 1937. It has been taken since on subsequent visits but seems very rare.

S. albiceps Mg. In the key this species runs to *teretirostris* Pand., but there are four British species now known which run to this point, the others being *tuberosa* Pand. and *similis* Pand. These four species are all very much alike and difficult to distinguish from external characters, but easily recognised by their phallosomes, which are extremely complicated and distinctive. *S. albiceps* has already been recorded by me in 1936, *Ann. trop. Med. Parasit.* **30** : 343, and the phallosome illustrated by Prof. Patton. The peculiar flower-like process on the inner face is characteristic. Externally perhaps it may be distinguished from its allies, from *tuberosa* by its black genital segments (which are red so far as known in our British *tuberosa*); from *similis* by the absence of any definite brush of setae on the fifth sternite; and from *similis* and *teretirostris* by the presence of fringes of long hairs on both sides of the hind tibiae, these being present on the posterior aspect only in the other two species. *S. albiceps* Mg. is a species of very wide distribution but apparently characteristic of rather warmer climes than ours, and just reaches our southern counties where, so far as known at present, it is very rare. It was first detected when I obtained a single specimen at Clapham Wood on the Sussex Downs on 11 June, 1935; a second one was taken by me in Ham St. Woods in 1937, and in 1938 Mr. Collin obtained one ♂ and I a ♀ on Soakham Down, Kent: and Mr. Collin took another ♀ in Fairlight Glen, Hastings. Dr. C. B. Day also tells me that he caught one in Blean Woods, Kent.

Blaesoxipha Lw. (figs. 9–11).

No species of this exceedingly difficult but interesting genus, split off originally from *Sarcophaga*, but filling a very distinct place in the economy of nature, had been known as British until *rossica* Villen. and *gladiatrix* Pand. were recorded by me in the first supplement, but already one additional name can be added to the list, as true *erythrura* Mg. was found on Wye Down, Kent, when Mr. Collin and I collected there on 4 and 6 June, 1936.

The possibility of this species being found in this country was suggested in Suppl. I., and the differences between it and the very similar *rossica* Villen. were dealt with at some length on pp. 418–9 and need not be repeated here; but as pointed out in that place, the chief differences lay in the ♂ genitalia, and Mr. Collin has therefore again kindly helped me with drawings of these structures from both species, and they are reproduced in figs. 9 and 10, and will make the distinctions perfectly clear.

No ♀♀ were taken unfortunately, although each of us obtained a short series of about half a dozen ♂♂, so that little can be added to my previous notes about this sex: but according to Rohdendorf, the frons of *rossica* ♀ is wider than that of *erythrura*: that of *rossica* being nearly equal to eye-width at vertex. Also he adds that in *erythrura* the ovipositor is grooved to the tip on the upper-side, whilst in *rossica* the tip is flattened. I, however, cannot see this character in my specimens. *B. erythrura* is a larger species than *rossica* and that may help a little.

In July 1939 Dr. C. B. Day took *B. gladiatrix* near Corfe Castle and directed Mr. Collin to the locality, where the latter obtained 4 ♂♂ on 23 August. Mr.

Collin has drawn the genitalia of one of those as reproduced in fig. 11, and this should place the species beyond doubt. The Corfe specimens were identical with the New Forest ♂ which Dr. Villeneuve saw and confirmed, and the figure agrees with Rohdendorf's figure of *gladiatrix*.

Unfortunately, however, the name must, it seems, be changed, as according to Rohdendorf *gladiatrix* Pand. has to sink to *laticornis* Mg. : apparently on the authority of Enderlein.

9

Fig. 9.—*Blaesoxipha erythrura* Mg.

Agria R.-D.

The genus *Agria* is very closely allied to *Sarcophaga* and indeed even in the *Katalog* our two species are placed in that genus. There are, however, important differences, notably in the terminal segments of the abdomen. In the species of *Agria* the first genital segment, usually regarded as formed by a fusion of the sixth and seventh abdominal tergites, is bent abruptly dorsally about the middle, and seems to show obvious signs of the join between the two constituent segments. There is a row of setae just before this bend. The side claspers or paralobes are fully developed in *Agria*, but occur only as small triangular pieces about the base of the central clasper in *Sarcophaga*. Instead of the shifting tessellations of the abdomen characteristic of *Sarcophaga*, *Agria* has, seen from behind, more fixed markings, a dark central line and a pair of round dark spots on each segment. *Agria* too has strong presutural acrostichals, sometimes present but rare in *Sarcophaga*. There are other differences but the above will be sufficient for identifications.

Agria has the typical Sarcophagine arista, plumose at base only, a few hairs

on the genae, though too fine to be called bristles; 3 D.C.; no discal abdominal macrochetae, only rather weak marginals on second visible segment; frons narrow; the rows of frontal setae not curved outwardly below; hypopygium all black.

A. mamillata Pand. was recorded in B.T. under *Sarcophaga*, and I can now add *affinis* Fall. to our list on the strength of two ♂♂ taken by me in Ham St. Woods on 2 June, 1936. Whilst closely resembling *mamillata*, it can be recognised at a glance in the ♂ sex by the absence of the curious wart-like protuberances present on both genital segments in that species. In the ♀♀ it may be difficult to distinguish, but I have not seen that sex.

Fig. 10.—*Blaesoxipha rossica* Villen.

Bezzi in the *Katalog* sank *mamillata* as a synonym of *affinis* and Stein thought the same, basing his argument on a belief that the genitalia were alike in the two forms; but careful examination reveals the fact that there are differences, hard to define but easily seen on comparison; moreover, in a long series of *mamillata* I have seen none in which there is any tendency for the wart-like protuberances to fail, so that I have no doubt that Kramer was right in insisting upon the distinction of the two species. Moreover, they appear to have very different life-histories: as recorded by Mr. A. H. Hamm, *mamillata* lives in the webs of *Hyponomeuta* as an external parasite; *affinis*, recorded as bred from a number of species of lepidopterous larvae, is apparently an internal parasite.

Helicobosca Bezzi.

H. distinguenda Villen. has been taken in several localities since the publication of B.T. I found it at Princes Risborough; Dr. Day obtained it at Came near Dorchester; and Mr. Collin captured specimens in Kent in 1937 at Soakham Down, Wye Down, and Ham St. Woods. Dr. Day wrote that it was quite

abundant in a wood at Came on 6 June, 1927, when he saw several dozen, and obtained ten specimens. He also reports a single specimen from Yellowham Wood, 6.vi.23.

Pollenia R.-D.

The genus *Pollenia* is one which provides a battlefield for the opposing hosts of " splitters " and " lumpers," and there will be disagreement regarding its treatment. Various facts had attracted my attention to the British forms of the *rudis* group of the genus and as a consequence I have given much time to the study of them lately and have arrived at certain conclusions.

Fig. 11.—*Blaesoxipha laticornis* Mg.

M. Séguy of the Paris Museum had already dealt with the genus as a whole from a wider Continental standpoint and had published his results in 1928, Mouches Parasites, *Encyc. ent.* **9** : 170–178, where he recorded thirteen species, and later in 1934, *Rev. franç. Ent.* **1** : 44–51, where the number of species was increased to seventeen, several known only from the Mediterranean region. He depended for his specific characters chiefly upon slight differences in the phallosome with somewhat inconstant external distinctions, so that the species were not very clearly defined.

My conclusions differ from those of M. Séguy in several respects, and seem to add three additional species or forms to the total. This may, however, be due partly to hairsplitting and partly to inability to agree with certain identifications of some of the older species, chiefly of Robineau-Desvoidy and Macquart. M. Séguy has kindly gone to much trouble to try to help me with regard to the types of some of these species, but, unfortunately, he tells me that all Desvoidy's Calliphorinae are missing, and he agrees with me that that

being so, and having regard to the unsatisfactory character of the original descriptions, the adoption of these old names is too risky: the determinations would only be correct by chance, and awkward changes might have to be made later on. In such circumstances, although it is probable that my species have been known before, yet I have thought it better to give them new names which can be sunk later if necessary.

We now know seven British species or forms as follows:—

1. Abdomen glossy and shining without tomentum . . . . . *vespillo* F.
   Abdomen not glossy and shining but more or less covered with tomentum . 2.
2. Abdomen bluish; the tomentum more fixed and uniform; thorax marked with three distinct broad dark stripes; antennae short, third joint not much longer than second; mesolobe narrowed in the middle *vagabunda* Mg.
   Abdomen olivaceous in colour with the tomentum changing according to point of view and appearing tessellate; thorax with four fine stripes . . 3.
3. Scutellum usually bearing three setae on each side; the smallest species, usually only about five or six mm. long; mesolobe narrow and thinner in the middle beyond which the tips spread out flatly; paralobes distinctly hooked at ends; no facial carina . . . . . *varia* Mg.
   Scutellum usually bearing four setae on each side; larger species; mesolobe wedge shaped and not narrower in middle; paralobes straight . . . 4.
4. No carina between the antennae or at most a very slight one; head dark-looking compared with the allied species; antennae with third joint all black and rather long, more than twice length of second; palpi black; frons very narrow . . . . . *excarinata* sp. n.
   A distinct carina between the antennae; antennae with third joint less than twice length of second . . . . . 5.
5. Facial carina prominent, broad and flat on front; palpi yellow, with base only darkened . . . . . *carinata* sp. n.
   Facial carinae distinct but thin and forming a sharp edge; palpi black . . 6.
6. Frons and genae narrow, frons only about equal to half the width of the antennae; genae in upper part not more than two-fifths as wide as an eye; usually only one anterodorsal seta on mid tibiae
   rudis subsp. *angustigena* subsp. n.
   Frons and genae wider, frons about equal to width of antennae, genae in upper part more than equal to half eye-width; mid tibiae with two or more anterodorsal setae, the extra ones being smaller than the other
   rudis subsp. *rudis* F.

P. vespillo F. is a well-known, very common and generally distributed species, the only British one known at present belonging to that section of the genus characterised by a glossy shining abdomen. Other closely allied species are known on the Continent and if attention is given to the group it may be found that we also have other species.

P. vagabunda Mg. So far the two specimens of this species recorded in B.T. are the only British ones known to me. It should be easily recognised by its bluish colour, more resembling in this respect species like *Calliphora vomitoria* L., and by the three broad thoracic stripes, and the other characters mentioned in the above key. I should be glad to get its occurrence in this country confirmed, as the two specimens in question are females and it is a long time since I saw them.

Recently I was given an opportunity of examining two Continental specimens from the collection of Mr. H. Audcent, one of which bore the label "F. Kowarz Franznsbd." Agreeing fully with all the descriptions of *vagabunda* that I have consulted, including those of Lundbeck, Stein, and Séguy himself,

but with phallosome totally unlike that shown in Séguy's fig. 13 in the 1934, *Rev. franç. Ent.* paper, I am forced to the conclusion that there must be a mistake in the naming or numbering of that figure. The phallosome in these two specimens was much more like that of Séguy's fig. 8 called *bisulca*.

P. varia Mg. was fully dealt with by me in the 1932 Supplement, and I need add nothing to what I wrote then. It has proved to be a widely distributed and not uncommon species.

Pollenia excarinata sp. n.

This is very closely allied to *rudis*, of which it might be regarded as a subspecies, but it seems to me to be distinct enough to be treated as a full species.

Its chief and most easily observed character is the absence of a facial carina: there is evidence of a slight ridge where the carina would be, but as seen in profile the face is flat. The antennae are longer and darker than in either of our other forms; the third joint definitely more than twice as long as the second; the third quite black, the second variable in colour, more or less rufous. It is perhaps the largest of our species; there is not much yellow tomentum about the head, which looks blacker than in its allies, so that the general effect is that of a large dark insect. The ♂ frons and genae are narrow, resembling *angustigena* in that respect; the palpi are black, the basicosta too, these being more or less rufous in the other species; mid tibiae with two or three anterodorsal setae; hind tibiae with no shaggy pubescence on underside.

♂. Mesolobe wedge-shaped, rather narrow and carinate, only divided for a short distance at tip, with small thorn-like points; paralobes straight as seen in profile; in the phallosome the two fine long points of the hypophallus are hooked and distinctly curved towards one another, and the triangular ventral lobes have long slender drawn-out tips.

It seems especially to favour mountainous districts, although I have other records: it was in Scotland that it was first observed, and I have specimens from Kinrara and Granish near Aviemore; Loch Garten; Bridge of Brown and Loch Tummel; also from Witherslack; Dolgelley; Tan-y-Bwlch; Whixall Moss; Wyre Forest and Soakham Down, Kent. It seems comparatively scarce, but that may be because it has not been recognised.

In Séguy's table our species runs to *tenuiforceps* Séguy on account of the absence of a facial carina; but *tenuiforceps* is an Algerian species which I have not seen but which is apparently distinct; according to Séguy's figure its phallosome is unlike that of our species. Of the rest of Séguy's 17 species *labialis* R.-D. was one that seemed possibly identical with ours, but M. Séguy informed me that he had no confidence in his own determination of that species, as he had only seen some females that he had doubtfully referred to it; and having regard to the facts regarding Desvoidy's species already mentioned, he agreed with me that it would be safer to give our species a new name, and so I have called it *P. excarinata*.

I have made a ♂ in my collection from Tan-y-Bwlch, N. Wales, 6.viii.1901, the type of *excarinata* and a ♀ taken at the same time and place the allotype, and have so labelled them.

Pollenia carinata sp. n.

This is perhaps the easiest of this group to recognise; the broad flat-fronted carina separating the antennae, and forming two definite sulcae in which the antennae rest, distinguishes it at once amongst our British species; and the yellow palpi, with the base only darkened, are also distinctive, although palpi colour is not wholly dependable, as in

immature specimens of the other species they are occasionally pale. The ♂ frons is wide, half as wide again as the width of an antenna; the genae are also wide, the upper part more than equal to half the width of an eye; antennae short, third joint not much more than half as long again as the second, the second joint wholly rufous, the third often largely so; there are two anterodorsal setae on the mid tibiae; the venter is covered with long black hairs, unlike the fine down-like pubescence of *rudis rudis*, being longer and stronger altogether, and on the sternites are a number of still longer almost bristle-like hairs. The mesolobe is distinctive, wider, flatter and less wedge-like than in the allied species with two grooves running from the base into the two end points; its sides are parallel until near the end, where they slope to the split tip; the slit is deep, reaching almost one-third of the length, and the points on either side are flat and wide. The phallosome is not unlike that of *bisulca*, as illustrated in Séguy's paper (1934), but seems longer and slenderer with slight differences which could only be indicated in a sketch; it is quite unlike that of either of our other British species, long and thin with the central membranous ventral lobe squarish.

Perhaps by chance only this species has occurred to me chiefly at or near the seaside, at St. Ives, Cornwall; West Runton, Norfolk, and Blakeney Point; I have also odd specimens from Mr. H. W. Andrews from Greenwich Marshes, and New Eltham; but it was on the South Downs near Eastbourne, and on Malling Hill by Lewes in August 1938, that I met with it in abundance, when it appeared to be the only *Pollenia* present.

The question of the identity of this species has been one of considerable doubt. It belongs to a group characterised by broad, conspicuous facial carina and yellow palpi, of which I know, besides our *carinata*, a Continental species of which I have seen several specimens. The oldest name considered was *fulvipalpis* Macq. Macquart did not mention the carina but laid stress on the yellow palpi of his species, as may be judged from the name he gave it. The species was considered because in the Bigot collection in the possession of Mr. J. E. Collin is a specimen with the broad carina of this group bearing the label *fulvipalpis* Macq. Of course it does not follow that it is identical with Macquart's species, but I am inclined to regard this as probable. On examination of the genitalia it proved to belong to the non-British species mentioned above, which has claspers entirely unlike those of *carinata*, the paralobes long, thin and hooked at the apex, the mesolobe narrowed in the middle—or waisted—and tapered. M. Séguy appears to have identified a species with thin carina as *fulvipalpis*, and he tells me that Macquart's type, which is in his possession, is a ♀, although it was quoted by Macquart as a ♂. Anyway we do not seem to know the ♂ genitalia of Macquart's species.

Pandellé described a species as *bisulca* with broad carina and palpi of a "roux clair" and paralobes "un peu crochus au sommet vers le ventre," and for a time I believed our species to be *bisulca*, chiefly because it seemed to be the *bisulca* of Séguy; and even now I am not quite sure that Séguy's *bisulca* is not conspecific with our *carinata*. Our species, however, has not palpi of a "roux clair." They are dark at the base and pale only at the tip; and the paralobes are not bent enough to justify being characterised as "un peu crochus." Moreover, although M. Séguy at first pronounced one of my specimens to be *bisulca*, he has since expressed the opinion that *bisulca* is a different species with still wider frons and carina and denser pilosity.

M. Mercier (1927) called attention to *bisulca* as a distinct form (he regarded it as a subspecies only, not a species) and published a figure of its genitalia, and his figure shows paralobes like those of Bigot's *fulvipalpis*, certainly hooked and unlike those of our *carinata*. It, however, shows a phallosome not only unlike

that of *carinata*, but unlike Séguy's fig. 8 also. It may, however, prove of course that fig. 8 really should have been labelled as *vagabunda* : see note under that species. Anyhow there seem to be indications here of a third species of the group, and no case for using the name *bisulca* for our species.

Further, Mr. Collin has found in the Bigot collection a specimen of our *carinata* bearing the label " *viatica* R.-D." This of course proves little excepting that the species does occur on the Continent, as it cannot be regarded as necessarily representing Desvoidy's species. Finally Rohdendorf (1926) described a species *pallida* which was based almost entirely on a figure of a phallosome. The first account was in Russian, but he seemed to refer to nothing but the phallosome in that paper; later he described it in German but, excepting for negligible colour characters, again dealt only with the phallosome. He says nothing of the carina, the colour of the palpi, or the form of the genital claspers. Mercier thought it resembled his *bisulca*, but I consider that it is not just like Mercier's figure, but that it is nearest of all the figures to the phallosome of our *carinata*. But one cannot accept the name *pallida* without knowing more about the insect than we do. In all the circumstances, I have been driven to reject all these names and to give our species the new one *carinata*, and later on perhaps, with greater knowledge, it will be sunk as a synonym.

I have made a male in my collection taken on Malling Hill, Lewes, 1.viii.1938, the type and labelled it accordingly and a female taken at the same time and place as allotype.

P. rudis Fabr.

The forms that are thus left to become our restricted species *rudis* have a distinct but thin-edged facial carina; a more or less narrow frons in the ♂; antennae of medium length with the third joint barely twice the length of the second; black palpi; scutellum with four setae on each side; basicosta more or less rufous. The mesolobe is wedge-shaped and carinate, with the tip slit very slightly, and the two points rounded, shining and thorn-like.

I find, however, that even this residue of the old " omnium gatherum " species *rudis* can still be subdivided into two groups which seem to me to be of less value than full species and which I propose treating as subspecies. If one believes in evolution, and I certainly do so, one must believe that there will occur in nature every stage in the evolution of a species from its first deviation from type as a chance variation to its final complete segregation. These two forms of *rudis* do not appear to me to be completely segregated, as no single differential character is quite constant and identification can only be based on the sum-total of them; moreover, specimens do occur which it is difficult to place. Nevertheless " pure cultures " consisting of numerous individuals of a single form have occurred, so that I consider that they should be named, and other dipterists can regard them as species, subspecies or even as mere varieties as they wish.

These two forms I propose to name **Pollenia rudis rudis** subsp. n. and **Pollenia rudis angustigena** subsp. n., and they can be best described by the method of comparison. *P. r. rudis* seems on the average to be a rather larger insect than *angustigena* ; its ♂ frons is wider, being fully equal to the width of the antennae, that of *angustigena* being barely more than half as wide as the antennae; its genae also are wider, being more than equal to half eye-width, those of *angustigena* being only about two-fifths of eye-width; and the lateralia are similarly wider in *rudis*. Similar differences can be observed in the females : in *rudis* the frons at vertex is distinctly over eye-width, whilst in *angustigena*

it is just about equal to the width of a single eye; the hairs on the genae are also longer and denser in *rudis*. A useful character is that *angustigena* usually has only one anterodorsal seta on the mid tibiae, whilst in *rudis* there is almost always a second smaller one, and sometimes even a third. *P. r. rudis* has some rather shaggy pubescence on the underside of the hind tibiae, not very striking, but more so than in *angustigena*, which cannot be said to bear such pubescence. *P. r. rudis* ♂ has the venter covered by a dense, fine down-like pubescence, which extends up the sides to about the middle line, so that it is noticeable from the front; in *angustigena* the pubescence is less dense, not quite so fine and scarcely extends up the sides, so that it is not seen from the front. If one of the segments, say the third, is examined from below and an attempt made to count the rows of hairs from front to back (they do not run in rows and only a rough count can be made), it will be found that whilst in *rudis* there are twenty or more, in *angustigena* there are only fourteen or fifteen.

As already said, all of these characters vary: there may be two anterodorsals in *angustigena*, though the second will be small, and it seems to be chiefly in the females that this occurs; there may be only one in *rudis*, and the width of frons, gena etc. is not constant. They vary in other respects too: in the length and colour of the antennae, and the hind marginal wing-cell may be open, or closed, or even stalked. Mr. H. Britten found a large number in a house at Madeley, Staffs, on 21 March, 1937, and these, so far as examined, were all alike of the *rudis* form. I found at Alfrick, near Worcester, on 10 Sept., 1939, very large numbers, and brought home about a score, and these, excepting for one or two doubtful females, were all *angustigena*. It is one of our commonest muscids.

A male from Abberley Hill, Worcestershire, 4.ix.1938, in my collection has been made the type of *angustigena* and a female taken at the same time and place is the allotype.

A male from Madeley, Staffs, 21.iii.1937, taken by Mr. H. Britten, has also been labelled as type of the subspecies *rudis* and a female taken at the same time and place as allotype.

M. Mercier has used the name *rudis rudis* in a paper in which he has lumped several distinct forms, which I regard as species, under the general name *rudis*; his *rudis rudis* includes both my *rudis rudis* and *rudis angustigena*; his *rudis bisulca* is allied to my *carinata*.

Calliphora R.-D.

In B.T. first supplement *C. uralensis* Villen. was recorded as a British insect, its first detection being due to a headless specimen in Mr. Collin's collection taken at Tongue, Sutherlandshire, by Mr. Verrall many years ago. In 1938 Mr. Collin went to Tongue, hoping to find the species and so place the record on a firmer basis, and was successful. It was apparently far from common or generally distributed in the district and it was only after much search that he found a mountain ash in full flower, which was proving very attractive to insects and especially to members of the genus *Calliphora*. Most of the flies were *vomitoria* L., but from amongst them he was able to obtain two ♂♂ and three ♀♀ of the rare *uralensis* Villen. He believed that the species could be recognised even in the ♀ sex by the front spiracles being dark, whilst in *vomitoria* they were yellow. *C. germanorum* also has dark spiracles but it has conspicuous thoracal stripes, and *uralensis* has only faint ones, and the genae in *uralensis* are yellower than in *germanorum*.

Acrophaga B. & B.

In B.T. Supplement I, I mentioned that Ringdahl had found that the species we knew as *A. alpina* Zett. was not the true *alpina* according to Zetterstedt's types, and he renamed our species *subalpina*. Since then I was very interested in obtaining the true *alpina* in Scotland; only a single specimen so far, taken at Glenmore on 5.viii.1935, but it shows that both species occur here. Ringdahl found that in Sweden *subalpina* was more southern and lowland in its distribution, and *alpina* was confined more to the highlands and north of the country; and it will doubtless prove to be the same here. The two species are easily separated by the following characters :—

Eyes narrowly separated; frontalia about equal in width to the frontal orbits; scutellum with four strong bristles on each side; middle tibiae without anteroventral bristle; thorax with distinct middle streak . . . *subalpina*.
Eyes separated more widely; the frontalia fully twice as wide as an orbit; scutellum with only three bristles on each side; middle tibiae with an anteroventral bristle; thorax with markings indistinct . . . . *alpina*.

The end of the abdomen in the ♀ of *alpina* is according to Ringdahl armed with strong bristles.

Leucostoma simplex Fall.

This species was included by Verrall in his *List of British Diptera* 1901 as *Psalida simplex* Fall., but as I had failed to discover a British specimen in any collection, and had never met with it myself, it was omitted from B.T. 1928. Both Walker and Meade had included it in their works, but gave no information about its occurrence, excepting the single word "rare." Since then, however, two single specimens have been taken, a ♂ at Hurn, Hants, 4.viii.1932, by Mr. E. Rivenhall Goffe, now in Mr. J. E. Collin's collection, and a ♀ at Slough, Bucks, 22.viii.1936, by Dr. O. W. Richards.

In the key in B.T. it would most probably be run down at 28, where it might even be confused with *Rhinophora lepida* Mg., which species has actually been sent to me as *simplex*; but it can be readily distinguished from that species by its very large, white, domed squamae; those of *lepida* being small and upcurved; also its genae are bare and those of *lepida* setose, and by the entirely shining abdomen in both sexes, that of *lepida* having white tomentose bands in the ♂.

As the projection of the epistoma between the vibrissaria is not very pronounced, it might be run to 30 in the key and then on to 54, where again the large, white, domed squamae should be sufficient to enable it to be separated at once from either *Plesina* or *Melanophora*. In addition, however, those two species both have wide frons with orbital setae in the ♂♂ and *Leucostoma* has a frons about half eye-width and no orbitals in the ♂♂.

The ♀♀ can be distinguished at once from nearly all other Tachinidae by the genitalia which project from the tip of the abdomen as a pair of forceps-like processes. There is a small group of genera characterised by similar genitalia, but the only other one occurring in this country is *Cinochira*, with which *Leucostoma* could not possibly be confused. These forceps-like terminalia, large white squamae and long-stalked first posterior cell constitute a very distinctive combination of characters.

The flies are small, about 4 to 5 mm. long, with long slender abdomen entirely shining, with marginal setae only; thorax shining black also, with patch of white tomentum about the humeri; eyes and genae bare; antennae short, third joint one-third longer than second,

and arising at about the level of the middle of the eye, thus leaving a high frons; interfacialia narrow and somewhat arched but not strikingly so; palpi yellow. Stalk of first posterior cell nearly as long as hind marginal cross-vein, and hinder cross-vein half-way between the bending and the discal cross-vein. Legs entirely black.

See 1934, *J. Soc. Brit. Ent.* **1** : 25, where the Hurn specimen was recorded.

Subclytia Pand.

An unexpected capture this year (1939) was a specimen of *Subclytia rotundiventris* Fall. ♀, which Mr. Collin obtained on Farley Down on 3rd June. Meade had recorded it as British but the specimens upon which his record was based proved to be *Myiobias*. *Subclytia* seems to belong to the PHASIINAE but is not typical of that subfamily.

The sternites are large and fill up the space between the edges of the tergites so that the connecting membrane is not visible. Characters typical of the PHASIINAE are the rotund abdomen, with chaetotaxy only feebly developed; and the wide domed face, projecting between the vibrissaria. Its all-yellow antennae, face, palpi, legs, excepting for the black tarsi, and abdomen, excepting for very small black spots on sides, and in the ♂ one or two in the centre also; its dark grey thorax, and the venation with the first posterior cell ending at the tip of the wing, narrowly open, the fourth longitudinal with the bending very obtusely rounded, and the hinder cross-vein nearer to the bending than to the discal cross-vein, will be sufficient distinctions to enable it to be recognised readily. The frons is rather dark in the upper part; in the ♂ apparently about one-third of eye-width, in the ♀ about three-quarters of eye-width, with the frontalia rather narrower than the orbits; antennae short, third joint about half as long again as second, and standing rather far apart at the base; palpi small; squamae large and domed. Dorsal thoracal setae restricted but 4 postsutural D.C. distinct, and there is a small intra-alar. Scutellum yellow with a narrow dark front margin, a pair of strong apical setae, and a strong pair of basals, with intermediates little developed.

It is recorded as a parasite of *Elasmostethus griseus* (L.) and seems to have a northern distribution on the Continent.

NOMENCLATURE.

I have not attempted to deal with the numerous cases where changes of names have been proposed. It is possible that many of them will not be adopted and it is to be hoped so, for it is most unfortunate that the very code of laws which presumably was drawn up for the purpose of securing uniformity and continuity has had the opposite effect, and we are reaching a stage now where the confusion is so great that it seems likely to act as a very serious drag on the further pursuit of the study of entomology. It has been suggested that entomologists should have a code of their own, and it seems to me that it is only by the production of a new code avoiding some of the worst features of the old that serious difficulties may be avoided. The strict application of the Law of Priority in cases where obscure names have been revived to take the place of names that have been generally used for a century or more, is one evil and might be remedied by the imposition of a time limit. The rules regarding the determination of types are working most unfortunately, and should be carefully revised; and much more use might be made of references to the International Commission of Zoological Nomenclature for decisions to retain

familiar and much-used names, or to rule out undesirable and out-of-date works.

It seems to me that the time has now come when entomologists should meet together and go into the whole problem, and arrive at something like agreement as to the best course to follow, and I should be very glad if the Royal Entomological Society of London would take steps to this end.

In conclusion, I wish to thank all those kind friends who have helped me with specimens and in other ways, and in particular Mr. J. E. Collin for his extremely valuable assistance rendered generously and continuously. He has not only helped me during many years by collecting TACHINIDAE whenever and wherever he had the chance so that the majority of the species newly recorded are due to him, but I am particularly in his debt for his beautiful drawings of genitalia without which this paper would have been poor indeed. Also I must again acknowledge the important help that Dr. Villeneuve de Janti has continued to give; his great knowledge of types has been of much use to me and he has never failed to respond when I have appealed to him.

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